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LECTURES
ON
COMPARATIVE ANATOMY
AND
ANIMAL PHYSIOLOGY,

DELIVERED BY

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LECTURE XLII.

ON THE DIGESTIVE ORGANS OF THE ARTICULATED OR DIPLO-NEUROSE CLASSES.

THE perfection of outward forms is more important in the economy of nature than that of individual parts, whether of organized or inorganic bodies, because it is principally by their exterior that the relations of objects are established with surrounding nature. The long cylindrical serpentine form of the body in all the helminthoid and entomoid classes is that best suited for the creeping, piercing, sucking, carnivorous, and parasitic propensities, so remarkably characteristic of this great articulated division of the animal kingdom, and their internal organs, especially the digestive, partake of this lengthened form. We have seen in the radiated classes of animals, that the development of the internal organs, like the external form of the body, is chiefly from a central point, or from a short axis, towards the sides or periphery of the body, and that the shortness of their expanded and capacious digestive cavity enables them often to dispense with a second orifice to their alimentary canal—their intestine radiates in simple or ramified cæca from a central sac. But as we were led, in pursuing these radiated forms, from the globular bodies of the *monads*, with their cæca radiating from a central monostomatous sac, to the long vermiform bodies of the *holothuriæ* and *sipunculi*, with their extended alimentary tube opening by two terminal orifices; so we are led, in pursuing the articulated forms, from the long serpentine bodies of the worms and the winged serpents of the air, the insects, to the short and broad bodies of the brachiourous decapods, which lead us to the molluscous forms. The carnivorous character of these articulated classes, and the highly-organized condition of their prey, are indicated both by the limited capacity of their straight alimentary canal, which almost always opens at the two opposite extremities of the body, and by the destructive prehensile instruments placed at its commencement. They are almost all free animals, and for the most part possessing power of rapid locomotion, so that, with their highly developed nervous system and organs of sense, they are well adapted to satisfy their carnivorous instincts, by distinguishing and overtaking the most highly organized and the most suitable prey.

As the digestive organs of the *articulata* have thus their form impressed both by the lengthened narrow form of their body and their predaceous propensities, we observe great uniformity in the plan of structure throughout these classes; indeed we still recognise in these animals the digestive apparatus of the worm, whether we observe them, like the entozoa, buried in the warm flesh of living animals, or sucking, like larvæ, the putrid fluids of the dead; whether we observe their worm-like trunks devouring the living prey which they have seized in their airy nets, like the arachnida, or taking it by surprise in dark recesses, like the myriapods upon the land, or encountering it at the bottom of the sea, like the crustacea, or pursuing it through the air mounted on wings, like a pegasus. These various classes present only different modes of conveying the same straight, narrow, simple, digestive apparatus to its destined food.

The simplest forms of the alimentary cavity met with in the articulated animals, are those of the intestinal worms, which are all parasitic and carnivorous, feeding only upon living prey. We see this blood-thirsty character manifested also in many of the helminthoid animals, which are not intestinal, in some even of the red-blooded worms, as in the common *leech*, in the *pentobdella*, and many others. We see it more or less throughout the classes even of articulated animals with articulated members, that feed generally upon living prey, or suck the fluids from the carcasses of the dead. Now this carnivorous and cruel disposition, which is so extensively manifested throughout the articulated classes of animals, corresponds with the contracted and abbreviated character we observe in their alimentary canal. We have seen already, in speaking of the hard parts of these animals, the complicated masticating apparatus, moving laterally, which is so generally placed at the sides of the mouth, in the form of mandibles and maxillæ, in the higher articulated classes. We have seen also the complicated organs of the senses placed in the vicinity of the entrance to their alimentary canal, the palpi so numerously attached to the jaws, the antennæ also, so extended and numerous, the organs of hearing, and the complicated and delicate organs of vision which they so commonly present. Now we observe, as a character of the alimentary canal, remarkable for its constancy in these articulated animals, that it passes in the shortest distance, longitudinally, through the body, from the mouth to the anus, and that for the most part it passes without convolutions, and with few enlargements in its course. It is true, however, that many of the forms belonging to this extensive group are organized to feed upon vegetable substances, for we are now speaking of a division of the animal kingdom that doubles all the rest of the classes taken together. But in those of which the food consists of vegetable substances, we find that the alimentary canal is proportionally longer, wider, and more convoluted, and that it has larger cavities and glands developed in its course, thus corresponding with the varieties of the alimentary canal in higher divisions of the animal kingdom, where the mucous lining of the digestive cavities is always more developed in phytophagous animals, and the outer serous covering in carnivorous species.

In the class of entozoa we meet with the first stage of the various systems of articulata, and some forms of the digestive cavity here present themselves, even simpler than in the polygastrica. In the *hydatid*, as in the hydra, there is a simple digestive bag, with a single orifice or mouth. This mouth is a small perforated papilla placed at the extremity of a long neck, which is generally capable of being distended according to the quantity of fluids imbibed, so as to cause this neck almost entirely to disappear, and the whole body thus distended, appears as a thin, white, digestive, transparent bag, with a small opaque head. There are also four lateral, round, projecting papillæ around the head, by means of which the *hydatid* or *cysticercus* appears to be fixed; and the middle oral papilla is surrounded by a double row of extremely minute sharp spines, a spiny structure which we see around the absorbent orifices or heads of most of the intestinal worms. A remarkable form of these parenchymatous entozoa occurs in this *cœnurus*, the form of hydatid found so often in the brain of quadrupeds. It appears to the naked eye like a large, whitish, single, translucent, very delicate sac. On looking, however, attentively at the surface, you perceive, instead of an opaque point to indicate the mouth or head, a numerous congeries of those opaque whitish points which indicate numerous heads, similarly constructed in all respects to those of the single hydatids—numerous mouths here leading into the same digestive cavity. The *cœnurus* is thus distinctly, what has commonly been called, a compound animal, although belonging to the class entozoa. We have these so-named compound animals with many heads in the first division of the animal kingdom, common in the zoophytes, where many mouths lead into one animal. We have these compound animals also in the first division of the molluscous animals, common in the tunicated class. The single orifice of the hydatids must serve both as mouth and anus, if excrementitious matter is at any time discharged from their body.

There are many of the entozoa which have a more complicated form of digestive apparatus, but which yet present no trace of an anal orifice distinct from the mouth. This is the case with the long flat *taniæ*, and with a number of what Baron Cuvier termed parenchymatous entozoa, where the digestive matter, taken in by the numerous absorbent mouths, passes through the parenchymatous or cellular texture of the body, without its forming excrementitious matter, to be discharged by a distinct anal orifice. The taniæ are sometimes a hundred feet and more in length, each tænia forming an aggregate animal, consisting of a long concatenation of individuals, all of which have a distinct

lateral mouth, a distinct digestive apparatus, and distinct generative organs. On examining the anterior termination of the body, however, of this long jointed and flattened worm, we observe again, as in the *hydatid* and *cænurus*, four prominent lateral papillæ, or appendices, extending from the sides of the head, which secure the hold or attachment of the worm, and being connected to the trunk by a neck of great delicacy and softness, this rounded head is seldom found in the tæniæ collected in cabinets, being generally left adhering by its lateral suckers, in the bodies from which the worms were taken. The central perforated oral papilla is surrounded with teeth, as in the hydatid. Thus the first segment of the body is already very differently organized from the rest in these jointed worms, where there are yet no organs of sense developed from the head. In the *tænia crassicollis* there are six very prominent suckers disposed around the head, and the usual double row of sharp recurved spines surround the base of the central, oral, terminal papilla.

The alimentary canal in these *tæniæ* extends along the two sides of the whole body, and these two lateral longitudinal intestines communicate with each other by means of a transverse straight canal at the junction of all the segments with each other. Each segment is thus surrounded by an alimentary canal, which communicates not only with those of the adjoining segments, but also with the surface, by means of those prominent lateral papillæ which you perceive placed, in variable number, along the whole sides of the tape-worms. It would therefore appear that the fluids sucked into these canals, as in the cænurus and hydatid, and most of the parenchymatous entozoa, were applied entirely to the nourishment and growth of the body. As the segments are thus provided with lateral mouths leading into their circular intestine, these worms may continue to absorb and to live after they have been torn into many pieces. Along the middle of the body we observe a longitudinal central canal passing through all the segments, and communicating with the ovaries (which you observe filled with mercury), and occupying the centre of each segment in the injected specimens before you. Each ovary has its oviduct extending to the side of the segment, and a glandular sac communicating with its duct, considered by Nitzsch as a testicle; so that each segment, thus provided with distinct digestive and generative apparatus, may be regarded as a separate animal, or easily susceptible of independent existence. The *distoma hepaticum* is like one great segment of the tænia more highly organized, in which we perceive, descending from the mouth, two ramified intestines extending parallel near the middle of the body; the ovaries extend along the sides, and two ventral parallel nervous filaments are seen united below the œsophagus, and ramifying around that passage.

In the long cylindrical and more perfect forms of the entozoa, the alimentary canal is provided, as in the *ascaris* and many similar genera, with two apertures. The oval aperture is generally terminal at the anterior part of the body, and provided with a distinct muscular apparatus to move the surface of the skin, and the prominent retractile lips. The three oral lobes, with their minute teeth in this minute intestinal worm, present us with a miniature representation of the masticating apparatus of the leech. The anterior part of the alimentary canal, into which this mouth leads in the ascaris, is strong and muscular. It is dilated in form like a small stomach, though considered as the œsophagus, and with thick muscular parietes. It is situated like the stomach of the crabs. It is contracted at its lower extremity; and from this muscular œsophagus commences a more extended and wide portion of the alimentary canal. This whole alimentary canal passes in a straight line from the mouth to the anus, the anus being at the opposite extremity of the body on the lower surface. In the course of this straight lower dilated part of the alimentary canal, numerous minute appendices open and ramify laterally, which appear to receive the more highly nutritious and digested part of the food, and perhaps to afford some secretion to mingle with it for the purpose of causing a more complete digestion of the soft matters which these worms absorb from the interior of the intestines in which they occur.

This form of the digestive organs, which is common to most of the long cylindrical filiform entozoa, approaches the nearest to that of the *halithea*, the *hirudo*, and many of the higher red-blooded worms, where we observe the same straight alimentary canal, open at both ends, with a dilated œsophageal portion, and with numerous cæca, often ramified, developed regularly from its sides. In the highest animals of this class, as the *lernæa* and *lampreglena*, which have a more entomoid form, and suck the blood from the delicate parts of the surface of aquatic animals, the mouth is provided with rudimentary uniform mandibles, adapted to tear the surface to which they adhere, and their intestine passes straight, short, and wide, from the mouth to the anus, surrounded in its course through

the trunk by the numerous lobes of the liver, which, first formed of all the chylopoietic glands, fills a great portion of the trunk here, as in the higher articulated classes of insects and crustacea.

The rotiferous animals, though minute and very transparent in their texture, are powerful, muscular, and carnivorous animals, with strong, lateral, serrated jaws, moved by large muscles, and which appear in incessant action while they are surrounded by animalcules. Their alimentary canal is generally short, straight, and capacious, with enlargements in its course, which vary in their forms in the different species. In some, the intestine forms a uniform, long, undivided sac, as we see in the *hydatina senta*, one of those minute and very transparent wheel-animalcules that so much abound everywhere in the fresh-water ponds. We observe in those beautiful, transparent, and colourless animals, a strong muscular apparatus, forming a round mass within the head for moving the mandibles. Those mandibles move transversely, and are powerful, and of a horny, firm texture, although belonging to so soft, delicate, and transparent an animalcule. From the œsophagus, which is generally a very narrow part opening immediately behind the mouth and jaws, the alimentary canal descends into a lengthened lobed cavity, forming a large distended stomach. This wide portion is of various forms in the different kinds of rotiferous animacules. In some it is more globular, as in the *euteroplea*, *diglena*, *synchaeta*, and *brachionus*. In others, as in this hydatura senta (*Fig.* 126, *g h i*, Vol. II. p. 291), which is one of the vorticellæ of the older writers, the alimentary canal is of a more lengthened and tapering form, the part considered analogous to the stomach. It passes nearly in a straight line through the body, however, and terminates towards the distal extremity in a general passage or cloaca—a cloaca which also receives the terminations of the female and of the supposed male organs, as seen in the magnified representations before you. This then is the common character of their alimentary canal, and we still perceive the carnivorous type indicated in its shortness and its straightness, and in the organs with which it is provided.

It is narrow and cylindrical throughout in the *rotifer vulgaris*, with a winding direction from the mouth to near the anus, where it enlarges suddenly into a globular sac. The lower part of the intestine is slightly curved upwards upon itself in the *brachionus urceolaris* and *pterodina patina*, and it presents innumerable short cæcal prolongations extending from around its sides, like those of an annelide in the *philodina roseola*. The stomach and the whole alimentary canal move freely and loosely backwards and forwards, by means of long and slender muscles, in the wide transparent bodies of these minute animals, and the two glandular sacs of variable form, attached to the sides of their stomach, are moved to and fro with that organ. Although their large round masticating apparatus of muscles and jaws, is in continual motion, advancing and retreating, and seizing and squeezing the animalcules which are drawn into the vortex produced by their vibrating cilia, we can frequently recognise entire animalcules within their capacious digestive sac. These animals frequently present large cæcal appendices prolonged from the sides of their stomach like those of cirrhopods, as we see in the *megalotrocha alba* and the *diglena lacustris*.

The digestive and masticating apparatus of the cirrhopods present the same close affinities to those of the articulated classes which we observed in their external parts and in their organs of animal life. They are provided with mandibles which move transversely, with a pair of maxillæ, and even with rudimentary soft palpi attached to the maxillæ. The mouth opens into a short, contracted œsophagus, provided with two salivary glands, and this into a distended stomach, which is sacculated, provided with two cæcal appendices, and closely surrounded by the liver. The numerous small compacted lobes of the liver open freely by short ducts with wide orifices into the cavity of the stomach. From the stomach the wide and loose intestine passes along the dorsal part of the body, following its curved direction, and without any convolutions. The body itself assumes a curved form, the head of the animal being fixed by muscles of attachment near the bottom or fixed part of the shell, and its back being bent along the dorsal closed part, so that the anal portion of the intestine is prolonged beyond the termination of the trunk. It is prolonged into the base of a long tubular funnel, which is seen in the specimens before you projecting downwards from between the middle of the long curled feet. The difference of the light colour of that long slender annulated and tapering proboscis at once enables you to distinguish it in the centre of these long cirrhated and curled feet. This prolonged termination of the intestine and oviduct is obviously necessary in articulated and enclosed animals of this kind, for if the excrementitious matter and ova had been discharged into the cavity of the mantle and

of the shell, into which the water is constantly drawn from respiration, it is obvious that it would have put the animal to great inconvenience. These excrementitious matters are therefore conveyed as far as possible beyond the contact of the respiratory and other delicate organs inclosed within the shell, by means of this lengthened funnel-shaped and transversely striated tube. These cirrhopods appear to feed only on the minute floating animals or particles of organic matter brought within reach of their mouth by the currents of water drawn into their mantle for respiration. The numerous perforations of their stomach by the short hepatic ducts which open into it, approximate this part of their structure to the corresponding organs of the molluscous classes.

The annelides, or red-blooded worms, are more diversified in their forms, habits, and kind of food, than the other smaller helminthoid classes, and they present therefore a considerable variety in the form and structure of their digestive apparatus, and especially in their organs of mastication, which are often numerous and complicated, and in others entirely wanting. As in the simple nematoid entozoa, we observe the alimentary canal of the *naides* passing straight through the body, without enlargement or convolution, and with its two openings terminal and of the simplest structure. In the earth-worm there is a large upper and a smaller lower lip possessing great sensibility, and from the wide cavity of the mouth a narrower portion, the œsophagus, leads to a sacculated and dilated part of the canal, forming three cavities of the stomach, placed immediately behind the genital organs, and about a third from the anterior extremity of the animal's body. This stomach presents a distended and lobed appearance, and opens into a smaller part of the intestine, which continues slightly tortuous along the middle of the trunk, and gradually enlarging as it descends to the anus, where distinct levator and sphincter muscles can be detected. The exterior of the intestine from the stomach to near its termination is surrounded by a layer of glandular follicles, considered as the liver in this worm. The whole alimentary canal is generally found filled with moist earth and soil, which the earth-worm is incessantly conveying through its body in order to feed upon the organized particles in that matter. The intestine is also very capacious, and more tortuous, in the delicate transparent body of the *pectinaria* and in the *arenicola*, which are constantly transmitting the moist sands of the sea through their alimentary canal to extract the food, of various kinds, which is mixed with them. In the *nereides* there is generally a strong and broad proboscis, often numerous jaws moving transversely, a distinct stomach with longitudinal folds, and containing horny teeth, as is common in insects, and the greater portion of the intestine is provided with lateral cæca, as in most of the higher annelides. From the part of the intestine where these lateral prolongations or cæca cease to be developed, the rectum passes straight to the anus.

The same structure of the alimentary canal has been long known to exist in the common *leech*, by the dissections of Delle Chiaie, Meckel, and many others. The lateral undivided cæca increase in size in the leech as we pass backwards along the alimentary canal, and the posterior pair of cæca, much larger than the others, extend backwards along the sides of the rectum, as you observe carefully figured in these plates of Weber. The three jaws of these animals, surrounded by a muscular sucker, and armed each with a double row of sharp teeth, are not employed solely in sucking the fluids from the larger living animals. They live on the smaller aquatic animals which swarm around them in the stagnant waters they frequent. I have found the entire legs and other parts of the common triton, *triton cristatus*, undigested in the stomach of the *hirudo sanguisuga*, so common in all our stagnant fresh-water pools. The small mouth and short membranous œsophagus of the sea-mouse or *halithea aculeata*, lead to a wide large muscular stomach with firm thick parietes, and provided at its entrance with four sharp triangular horny teeth; so that this cavity has already an analogy to the strong muscular and toothed stomach of the crustacea, and the toothed gizzard of insects and many other animals. This dilated muscular sac is seen, though less developed, in the *arenicola*, the *lumbricus*, and many of the inferior annelides.

This firm muscular sac you observe opened in this specimen of the aphrodita or *halithea*. The position and the nature of that circumscribed sac in the red-blooded worms thus also corresponds with the common character of the first part of the alimentary canal in the nematoid or most perfect of the entozoa. From this sac, strong and muscular, we observe in the halithea the intestinal canal wide, thin, and membranous, passing in a straight line along the whole of the remaining extent of the body. Here it is loose and thin in its parietes, extremely dilatable, and has throughout its whole course numerous long subdivided and ramified cæca developed from its sides. Those ramified cæca in the specimens before you, you

will observe to be filled with a quantity of the thick turbid brownish-coloured digested matter of the food. These two rows of cæca come off close to each other on the dorsal side of the intestine, by narrow orifices, extending in ramifications to either side. They present the most developed, the most subdivided, and the most isolated form of the intestinal cæca of the annelides, with which the liver commences its development, and which we have traced under various forms through all the helminthoid classes. And we thus already observe in these helminthoid articulata, almost all the typical parts and forms of the alimentary cavity, which we trace, more highly developed, through the succeeding entomoid classes, as we formerly observed to be the case also with their hard parts, and all their organs of relation.

The entomoid articulata indeed are, for the most part, but the same helminthoid animals more advanced in development, and mounted upon limbs to carry them through the rarer medium of the air, and to exercise their carnivorous propensities on higher forms of organization. In the long, equally developed vermiform bodies of the carnivorous *scolopendræ*, among the *myriapods*, we still find an imperfectly developed masticating apparatus, consisting of a small pair of mandibles, and a small pair of maxillæ, with an upper and lower lip; then follow two pairs of larger jointed organs, which are formed by the metamorphosis of the two first pairs of feet into masticating organs. The salivary organs, like those of insects, consist of small simple cæca, enlarged at their closed extremity, and opening into the mouth; and the alimentary canal, like that of the earth-worm, passes straight, thin, and membranous, through the whole body, with little appearance of enlargements, and without convolutions. The contracted portion of the œsophagus opens into a wider, thin, and lengthened stomach, and, as in the long cylindrical bodies of the serpents among the vertebrata, this lengthened membranous stomach opens into a narrower portion of small intestine, which terminates in a perceptibly wider colon. This simple form of the digestive apparatus is very similar in the *iulus*, and in most of these long serpentine forms of the myriapods, which corresponds with the active, cruel, lurking, and predaceous character of the animals of this small class.

In the immense and greatly diversified class of *insects*, the digestive apparatus varies in its form and development, according to the density and the nature of the food, the living habits and condition of the species, and the state of the animals with regard to their metamorphosis. The mandibulate forms of the masticating organs are best adapted for hard substances, and the proboscis for food in a fluid state, but most of the sucking insects require the solid apparatus to pierce the surface from which they are to obtain their fluid nourishment. The digestive organs of insects already present almost all the assistant chylopoietic glandular organs of the highest animals in a rudimentary condition, so that their structure is interesting, as presenting the embryo-state of the liver, the salivary glands, the pancreas, and many other parts important in the general process of assimilation. Their alimentary canal consists, obviously, of an internal mucous coat, and of an external, probably peritoneal, coat, which presents an appearance of muscular fibres, and is regarded by Dufour as a muscular tunic, consisting of longitudinal and transverse fibres. Between these two coats there appears to be generally a more loose and cellular tunic, which Rampohr considers as common to all insects, and a delicate mesentery connects the convolutions of the intestine with the segments of the abdomen. The ramifications of the white opaque trachcæ upon this mesentery, are seen with the naked eye in the common fly, and in most insects. The interior of the mucous coat is generally smooth, as in most of the invertebrata, free from plicæ or valvulæ or villæ to extend its surface. The peristaltic motion of the intestine is obvious on opening the abdomen of the living insect, and in the short bodies of these animals the intestine is often many times the length of the trunk.

From the proboscis, and mouth, and pharynx, a narrow œsophagus generally leads to an enlargement, or crop, which receives and retains for a time the food when first swallowed. From this thin glandular enlargement of the œsophagus, the canal generally opens into a small strong gizzard, with thick parietes, and provided internally with numerous longitudinal rows of sharp dense horny teeth. This strong triturating organ is most developed where the food is hard, and most requires its aid, as in most of the *orthoptera* and *coleoptera*; but in most of the sucking insects, as the *hemiptera*, where the food is liquid, this organ is scarcely perceptible. The largest, the most constant, and the most important enlargement of the alimentary canal of insects, is the long wide highly-glandular portion extending generally from the gizzard to the insertion of the hepatic ducts. This chylific stomach is generally provided with innumerable minute glandular crypta, de-

veloped from its whole parietes, as we often see likewise on the crop, and opening into its interior. Frequently this important chylific or digestive part is of great length, and divided into a succession of cavities, and it is generally most enlarged and glandular at its commencement or proximal part, becoming narrow, like a duodenum, at its lower or distal portion. This proximal enlarged portion of the long chylific sac, is the part which Dufour regards as the proper *stomach* of insects. From the termination of the chylific sac, or the entrance of the hepatic ducts to the anus, is the intestine, which varies much in its length and capacity and dilatations, according to the nature and quantity of the food which is to pass through it, as all the other parts of the alimentary canal are influenced by the same circumstances. The stomach is often enormous in the voracious condition of the larva, and becomes diminutive in the flying parsimonious imago.

In the *melolontha vulgaris*, or common cockchaffer, a well-known beetle, where the food is known to consist of vegetable matter, as we see it attacking the plants and vegetables in our gardens, the digestive apparatus is long and capacious. The alimentary canal here presents an enlargement at the lower part of the œsophagus, forming that part which is generally denominated the *crop*, and below this is seen a rudimentary gizzard. From this we pass to a very lengthened sacculated glandular stomach, the one in which the principal elaboration of the food takes place, and commonly termed the chylific stomach. In this cockchaffer we perceive its upper or proximal part subdivided into a number of small portions by transverse strictures. From this sacculated glandular part, the chylific stomach performs several convolutions, and terminates at length in a small dilatation. At the lower part of that dilatation, we observe on each side two tubular biliary organs to open. Those tubular organs, upon tracing them to a distance from their terminations in the intestine, are observed themselves to give off lateral small tubular developments; and thus the whole of the secreting surface of those tubes is immensely extended by the lateral cæca which they give off. This is the most complex form of the liver met with in the class of insects. Those hepatic vessels are convoluted generally into a large mass, which occupies a large portion of the abdomen, and surrounds the alimentary canal. This is a complex form of the liver, which we find common in insects that feed upon vegetable substances. A simpler form of the liver would be obviously that of being deprived of those lateral cæca, and shortened in its course; and in carnivorous insects, this is, in fact, the simple appearance of the organ. Other dilatations below this part of the intestine, which receives the terminations of those biliary organs, are considered as analogous to a colon and rectum. The rectum here dilates, and terminates in the cloaca.

In the *cicindela campestris*, which is a carnivorous insect preying upon others of this class, you observe another form of the alimentary canal, which is much shorter, on account of the animal nature of the food. The œsophagus passes down narrow, as usual, from the head, and dilates into a wide glandular crop of considerable size, with a minute gizzard at its base. The whole alimentary canal, from this crop and gizzard, through the succeeding wide, short, glandular, chylific stomach into the dilated colon and to the anus, is remarkably short and straight, without those long convolutions and dilatations which we see in the vegetable-eating insects. The chylific stomach especially we observe here to have a much shorter form than in the vegetable-eating *melolontha*, and to have numerous distinct glandular cæca radiating from all parts of its surface, those cæca pouring their secretion into this chylific stomach to assist in digesting the contents. At the lower part of their short chylific stomach, where it first becomes contracted, we observe the biliary organ to terminate. Those biliary organs are in this carnivorous insect simple, convoluted short tubes, one upon each side, which, after forming comparatively few convolutions, return, and terminate upon the same side, thus having on each side leading into the chylific stomach two orifices, the simplest condition, nearly, of the liver, met with in this class. From the chylific stomach the intestine passes, straight, very short, and narrow, to a dilated short colon, which contracts to form the rectum, which opens into the cloaca.

In the *scutellera nigro lineata* which sucks the young seeds of growing corn, the salivary organs are large, the hepatic very small; and the chylific portion of the intestine, with its enlargements and convolutions, composes almost the entire alimentary canal. In the *coreus marginatus*, which likewise feeds on vegetable substances, the alimentary canal is very similar in its parts and proportions to that of the *scutellera*, but the hepatic vessels are double on each side and terminate in a vesicle. In the *pyrrhocoris aptera* the alimentary canal is short, but its different sacs are large, for the coarse vegetable food on which it subsists; and its biliary organs, single on each side, form each at

its termination a round sac, which opens by a narrow neck into the chylific stomach. The hepatic vessels are double on each side; also, in the *alydus geranii*, the *miris carcelii*, and many other insects, we find these hepatic organs double on each side, and they often develop little sacs before they open into the stomach. In some insects, as in *aphrophora salicina* and this *cicada orni*, a much larger tube than the hepatic vessels is seen to pass off from the wide proximal part of the chylific stomach, and, after forming several convolutions, to return to terminate in the same cavity; this organ is regarded by Dutrou as a part of the stomach itself. The pancreas when present in insects, as you observe it figured in the *leptis*, the *bombylius*, and the *chrysotorum*, has, like the salivary and hepatic glands, the form of a simple or ramified tube or cæcum, the duct of glands being the first developed part.

The *arachnida* are animals of a carnivorous and often of a parasitic character; and this is indicated by the shortness and straightness of their alimentary canal, as seen in the spiders and scorpions. In the spiders we see the strong mandibles and the poisonous instruments placed at the side of the mouth for destroying and seizing their prey. The pharynx leads to a very short œsophagus, which presents a complicated form of crop, consisting of two upper and larger sacs and two lower and smaller sacs, which have a lengthened form, and open into the same part of the canal. Beneath this first multiple cavity the canal passes narrow into the abdomen, which is chiefly occupied by the large lobes of the liver and by the genital organs. These lobes of the liver surround a small stomach, simple and round in its form, and beneath this cavity the intestine, passing straight to the anus, dilates into a small colon. In the *scorpion* the alimentary canal passes with nearly the same diameter from the mouth to the anus, without forming a distinct crop, gizzard, or stomach. It forms indeed a continuous narrow straight stomach surrounded by the lobes of the liver, and preserves nearly the same breadth through the long narrow tail as through the broad short trunk. The form both of the alimentary canal and of the liver of these carnivorous arachnida, approaches more nearly to that of crustacea than the corresponding parts of insects.

Like the cunning, lurking, venomous, carnivorous spiders of the land, are the *crustacea*, the spiders and scorpions of the sea, shielded in armour, and lurking for prey in the dark recesses of the deep. With a short, straight canal through their body, which can retain no food, they are impelled by incessant hunger to destroy, and are emboldened in their contests by their solid protection and their destructive weapons, so that they let nothing, living or dead, escape their iron grasp or their voracity, and their digestive apparatus presents the most carnivorous form of this carnivorous articulated division of the animal kingdom. With acute organs of sense, and means of rapid locomotion, and of powerful prehension, and of complete mastication by six pairs of their feet being converted into jaws and by strong teeth being implanted in their stomach, they are well fitted to secure and to reduce to pulp all kinds of animal matter, and living in a watery element which almost bathes their stomach, they require no salivary glands to moisten their food. Their short œsophagus forms but a narrow separation between the mouth and the capacious stomach. The stomach occupies the upper and fore part of the cephalo-thorax. Within that stomach we observe a variable number of strong, hard, calcareous, and moveable teeth, which have generally the same dark tinge as the external shell itself. These are supported by a strong and dense calcareous apparatus, calculated for the attachment of the numerous powerful muscles that move those teeth. That structure, however, is not peculiar to these crustaceous animals. You see it common in the class of insects to have teeth in their muscular gizzard. In the molluscous classes, also, you see it common in many of the species to have teeth in the stomach, as in this *aplysia*.

At the pyloric extremity of the stomach in these crabs and lobsters, you observe upon each side the small openings of the two hepatic ducts from the numerous lobes of the liver. This hepatic duct on each side of the narrow contracted pyloric extremity of the stomach, ramifies and subdivides into innumerable small cæca; those cæca are aggregated together into distinct groups, and constitute the different lobes of the liver, which are disposed in large masses along the sides of the stomach; and between them and the stomach itself on the dorsal surface we find in the female the ovaries disposed, and in the male the testicles. From the pyloric extremity of the stomach the intestine passes in a straight line to the anus, occupying the dorsal and not the ventral surface of the body. Before opening, however, at this opposite extremity of the body, it generally dilates to form a small colon. The liver appears to be generally of inconsiderable magnitude in the articulated classes of animals with articulated members, and it does not present that complex

conglomerate structure, or that extensive secreting surface, which it presents in the molluscous classes. It is far from being so much developed in these articulated classes, generally, as in the molluscous, because there are much fewer carnivorous or destructive animals in the molluscous classes than in the articulated. The food upon which these articulated animals subsist being chiefly highly organized animal matter, it requires much less elaboration from secreted fluids poured into the digestive cavity, than it does in the molluscous animals where the food is lower in organic development, and where we observe, consequently, a more complete apparatus of salivary, hepatic, pancreatic, and other glands, to assist in the great and complex process of assimilation.

CASE OF SEVERE

CRANIAL AND CEREBRAL INJURY.

By CHARLES COTTON, *Esq., M.R.C.S.L., L.A.H., Bagshot.*

JOHN DAY, ætatis 14, of good health, a stable boy, was thrown forcibly against a gate, and afterwards trodden upon by a horse, by which he was severely injured. The accident occurred about ten o'clock in the morning of July 4th.

Symptoms.—The left eye is closed from contusion and effusion of eyelid; the scalp is lacerated to the extent of an inch, about two inches above the external canthus; there is a puffy swelling on the centre of the zygomatic arch, and a simple fracture embracing the posterior half of left parietal bone, and extending obliquely forwards to the junction of squamous portion of the temporal with the greater ala of the sphenoid bone. The fracture is parallel, above, with the sagittal suture, at a distance of half an inch. The bone is depressed and scalp much puffed. There is a state of drowsiness, alternate with shrieking, and violent efforts to remove himself from the by-standers; talks incoherently; countenance vacant; pulse quick and labouring; bleeding from the nose and mouth. He was immediately put to bed, the head shaved, and cold lotion applied. He was shortly seized with violent convulsive movements, lividity of countenance, rolling of eyeballs, and distressing efforts to vomit, during which about four ounces of bloody mucus were brought up, "the blood most probably being swallowed from the nose and fauces," the skin cold, and bedewed with perspiration. The convulsive movements, with efforts to vomit, &c., remained for near an hour and a half, when the following state occurred:—at first partial loss of sensation and volition, quickly followed by total insensibility, pricking or pinching making not the least impression; the pulse is slow, labouring, and irregular, 56; pupils permanently dilated, and insensible to the application of a lighted candle; breathing stertorous; lies prostrate upon his back.

Treatment.—He was bled freely to ℥xxx; ℈j of calomel was placed on the fauces, and a powerful enema injected, composed of muriate of soda, colocynth, and jalap. Two p.m., four hours after the accident. The enema has brought away several involuntary evacuations; respiration less stertorous; pulse has become quicker and somewhat full; pupil less dilated, and contracts slightly on application of a lighted taper; has spoken a word or two incoherently, and evinces uneasiness at being pinched or disturbed. Seven p. m. Bowels have passed a large quantity of feces, at first involuntarily; has requested to be moved to the bed chair the last few times; he continues drowsy; sensible on being roused; complains of excruciating pain in his head; thirst and pain in his body; pulse soft and compressible, 76; skin dry and warm; tongue furred. The slightest pressure upon the seat of fracture produces convulsive movements. Ordered lemonade, and a draught every four hours, containing *Vini Ipecac.* gtt. xv; *Magn. Sulph.* ℥j; *Liq. Ammon. A.* ℥ij; *Aquæ* ℥j. Spirit wash to the scalp.

5. Eight a.m. Has passed a restless night, repeatedly attempting to get out of bed; moaning and talking incoherently; slept towards morning; lies upon his back, is drowsy and dull, but displays consciousness on being roused; skin hot and dry; tongue furred; complains still of severe headach; pupils dilated, and showing little activity; pulse quick and sharp, 86; bowels unmoved. *Venæ sectio ad* ℥x; *Calomel* gr. ij, omni tertia horâ et pergat. Eight p.m. Has slept most part of the day; lies upon his side; is sensible, and recognises the by-standers; asks for drink; headach much diminished; pulse soft and compressible, 78; bowels have been once freely moved.

6. Has passed a good night; respiration easy; great disposition to sleep, from which he is instantly roused by the most trifling pressure upon the injured part, which is still much puffed and swollen; pupils less dilated; skin warm and moist; tongue coated; bowels unmoved; is perfectly sensible, and complains much of pain in the head. Ordered *Calomel.* gr. ij 4tis horis ad doses tres et haust.; *Sennæ*

n. a. p. s. f. Emp. lyttæ nuch. capitis. Perg.

7. Passed a good night, starting occasionally, and getting out of bed; skin moist; bowels open; countenance much more intelligent; pulse soft, 76. There still remains a disposition to sleep.

8 to 21. Bowels open, and much in same state as yesterday, but did not start in his sleep or attempt to get out of bed. Ordered toast and tea in lieu of gruel, which has been his only diet. From this time up to the present, 21st, seventeen days after the injury, no unpleasant symptom has occurred; his drowsiness has left him; bowels regular, and says he feels as well as ever, with the exception of being slightly deaf. The wound of scalp has healed, and the eyelid, which was so bruised as to be unable to be opened, is quite well; the puffiness of scalp has subsided. There is no evident depression of bone, but an evident callosity in the course of the fracture.

Remarks.

I cannot think this case devoid of interest. The severity of the injury and symptoms, which embraced permanent dilatation of pupils, loud stertorous breathing, and total insensibility, &c., together with the extent of fracture, I confess made me hesitate as to the treatment, whether I was immediately to convert a simple fracture into a compound, and raise the bone, or first try the result of measures which were more consonant with the inculcations of the Borough schools and my own feelings. Active enema depletion, and placing calomel upon the fauces, surpassed my most sanguine expectations, by rendering the pulse softer and fuller, and causing a gradual return of sensibility, to which, doubtless, the age of my patient in some measure contributed. The convulsive movements and uneasiness produced by pressure on the seat of injury, independent of the age of the boy, plainly proved that the internal table of the bone was involved, and the surface of the brain affected. I was at first doubtful whether the shrieking arose from a cognizance of local pain, or of affection of brain; its peculiarity made me incline to the latter opinion; at all events this case is one among the many which go to prove the impropriety of resorting to that dangerous instrument the trephine, without the most serious deliberation.

Scarlatina.

I take this opportunity of alluding to that now-prevailing epidemic, scarlatina, —I mean more particularly those cases where, in families affected, the eruption does not make its appearance; two of these cases died before medical assistance could be afforded, from impeded respiration, produced by sudden enlargement of the tonsils, totally obstructing the throat; and where, after death, on examination, the lungs and vessels of the brain were much congested, without any other obvious cause of death. I was more fortunate in a third case, where the person seemed to be sinking from suffocation, produced by this sudden obstruction of the throat. The removal, with a common bistoury, of a large portion of the glands, and the application of caustic, leeches, and venesection, restored my patient, without any unpleasant symptom.

Bagshot, Surrey, July 27, 1834.

USE OF

PLASTER OF PARIS

IN THE

TREATMENT OF FRACTURES.

To the Editor of THE LANCET.

SIR,—Observing in No. 569 of your most useful Journal a paper by Messrs. Bond and Gale, upon the use of plaster of Paris in the treatment of fractures, in which, among other observations, it is stated that that method, "*although not unknown, has never hitherto been brought into practice,*" I beg to say that the practice in question was adopted by myself, under the direction of Professor Kirby of this city, more than ten years ago, as will appear by the following case:—

A medical gentleman, of middle age, active habits, and sanguine temperament, residing in a country town, had the misfortune to be thrown from his horse upon a rough road, by which he received a simple oblique fracture of the tibia, about its centre. He was immediately carried home, the limb was "put up" in splints and bandages, some blood was taken from the arm, and the ordinary treatment usual in such cases was enjoined.

It was soon apparent, however, that the case would prove troublesome; the patient became extremely restless, and anxious to get out to his business; he insisted on sitting up in bed every day, and could in nowise be persuaded to observe the quietude so indispensable on such occasions. It is not to be wondered at, therefore, if at the end of six weeks, on removing the splints &c., no union had occurred.

At this period it was proposed by his attendants (Dr. Fisher, of Drogheda, and myself) to pass a seton between the broken

portions of the tibia, but this being objected to by the patient, Mr. Kirby's assistance was solicited. On the suggestion of that gentleman, the entire of the leg, both before and behind, the lower fourth part of the thigh, and the upper half of the foot, were enveloped in a coat of plaster of Paris, from one inch to one inch and a half in thickness, which soon formed so firm an encasement of the parts that all motion of the broken pieces of the bone was entirely prevented.

So circumstanced, our obstinate patient might as well have had his leg inclosed in a vice, and we had the satisfaction, at the end of three months from the receipt of the accident, and of six weeks from the application of our ponderous agent, to find that perfect union had occurred. The patient was soon able to use the limb, and has since continued perfectly well.

I hope, Sir, that Messrs. Bond and Gale will not suppose me to be actuated by any invidious feelings towards them in the statement which I have made, my only object being to elicit truth, and do a service to my professional brethren.

I think the cases they have stated are extremely valuable, and the practice, so far from being either "*impracticable*" or "injudicious," to be, on several occasions, extremely valuable as an "adjuvant" to the more common method of treating fractures.

It is well known, I believe, to the profession, that Baron Larrey has long been in the habit of confining the worst kinds of compound fractures under a mixture of white of eggs and flour for several weeks, or even months, without a change, and, as I have seen myself, with very great success; and the method in question only differs from the other in the greater density and more unyielding nature of the material employed.

The suggestion of Messrs. Bond and Gale, of making in the plaster, before it hardens, "*a groove an inch and a half in width, and extending the whole length of the limb,*" appears to be a good one, though I cannot say that my patient appeared to suffer much from the want of it. He only complained of the great weight of the application, indeed, so firm was it, that a mallet and chisel were required for its detachment. I am, Sir, your obedient servant,

JOHN BROWNE, M.D.
Member of the Roy. Coll. of Surg. in Ireland, one of the Surgeons to Saint Mark's Hospital, and formerly Surgeon to the Meath County Infirmary.
Molesworth Street, Dublin,
July 8th, 1834.

RECORD
OF THE
CONCOURS HELD AT PARIS,
IN JUNE, JULY, AND AUGUST, 1834,
To supply the Vacancy in the Chair of
CLINICAL SURGERY,
OCCASIONED BY THE DEATH OF BARON BOYER.

(Continued from page 666.)

THESES, AND ARGUMENTATIONS THEREON.

The subjects for the different theses to be sustained by each candidate against his rivals, in argumentation lasting two hours, are decided by lot, as well as the order in which the argumentations take place. It will be seen by the following list that most of the questions are not only highly important in a surgical point of view, but very interesting to the English reader. As examples we may particularly quote those of MM. SANSON, BLANDIN, and LISFRANC. The subjects are,

1. M. LEPELLETIER—Hemorrhoids and prolapsus of the rectum, and of their surgical treatment.
2. M. BLANDIN—A parallel between lithotomy and lithotrity.
3. M. SANSON—On the advantages and disadvantages of union by the first intention.
4. M. VELPEAU—Wounds of the head, indicating the cases which require the use of the trepan, and pointing out the consequences of that operation.
5. M. LISFRANC—On the different methods employed by surgeons to obtain obliteration of the artery in cases of aneurysm, and of their reciprocal advantages and disadvantages.
6. M. BERARD—Engorgements of the testicle.
7. M. GUERBOIS—Recto-vagina vesico-vaginal fistulæ.

THESIS OF M. BLANDIN.
(*Sustained July 24th.*)

PARALLEL BETWEEN LITHOTOMY AND LITHOTRITY.*

THE importance and interesting nature of this question induce us to make as complete an analysis of M. BLANDIN'S thesis as our space will admit. Lithotomy

* 8vo. pp. 165.

and lithotrity have each their warm partisans. Mr. KING, of London, has already traced a very excellent history of the two operations, and if our memory do not fail, gives the decided superiority to lithotrity. It will be seen by the sequel that the French surgeon inclines to lithotrity also, though in a much more modified degree.

Before entering on the question proposed, M. BLANDIN properly remarks, that it is lithotomy and lithotrity, such as they are at the present day, that he has to examine and compare. Now in the actual state of the science two lithotomic methods are distinguished above all the rest, viz., the *supra-pubic* and *sub-pubic bilateral*. In lithotrity there are three powerful methods, viz., *perforation*, *percussion*, and *crushing*; and it is thus only that he proposes to examine and compare the two operations. The thesis comprises four sections. 1. The history of the two operations. 2. A comparative examination of the consequences which attend both. 3. Comparative appreciation of the cases to which lithotomy and lithotrity are respectively applicable. 4. Comparative examination of the clinical results obtained by each.

Of the historical part we shall say nothing, as we hasten to more practical matter, except that in speaking of the *lateral* operation, M. BLANDIN designates it as the most imperfect of all that had been imagined for the extraction of the stone.

The second part of the thesis is dedicated to a comparative examination of the consequences which respectively attend lithotomy and lithotrity.

1st. *The pain.* In lithotomy this arises from the incisions, and during extraction of the calculus; in lithotrity it is developed during the introduction of the instrument, while seeking the stone, and while breaking it. The author concludes that, all things considered, the sum of pain produced by lithotrity is greater than that resulting from cutting, and that the latter operation has the advantage in this respect.

Lithotomy requires of necessity an incision made into important parts. Lithotrity requires nothing of the kind; here is the *immense* advantage of the latter; however, it should be remembered that the wound made presents several advantages; the blood lost moderates the inflammatory symptoms and assists in curing the secondary accidents produced by the calculus; on the contrary, lithotrity aggravates the irritation of the bladder and urinary organs; finally, when no accidents occur after the operation, the destruction of the stone is much more quick and the recovery of the patient more complete after cutting than after breaking the stone.

Besides the simple accidents of lithotomy we may have—

2nd. *Hemorrhage* of a venous or arterial nature, from the venous plexus round the neck of the bladder, bulb, &c., from injury of the superficial artery of the perineum; this is a slight accident, and often happens from division of the transverse artery of the perineum; but this ought never to occur in the lateral or bilateral operations unless there be an anatomical variety. M. BLANDIN quotes a case in which the transverse artery was divided by M. ROUX in 1822; plugging failed to arrest the bleeding, and M. ROUX took up the trunk of the internal pubic artery, inside the tuberosity of the ischium; the patient died.

3rd. *Injury of the rectum*, which may be divided, during the lateral or bilateral operations, when the incision is carried too near the anus, or in cutting into the sound. While dividing the neck of the bladder, or during the extraction of a large rough calculus, to avoid injuring the rectum it is of great importance to know the size of the prostate. M. BLANDIN has seen a case in which the largest portion of the gland was placed above the neck of the bladder, and this variety would have a great influence on the operation. Congenital luxation of the femur deforms the perineum, and throws the raphé considerably out of the median line. DESCHAMPS quotes a case where the rectum lay on the left side of the neck of the bladder; this variety would inevitably produce division of the gut in the common method.

4th. *Division* of the peritoneum, vesiculæ seminales, vasa deferentia, ureter, or pelvic fascia.

5th. *Extraction* of a large calculus may give rise to laceration of the bladder, prostate, &c.

6th. *Nervous accidents* from the fear of the operation. M. BLANDIN quotes a patient at the Hôpital Beaujon, who died a few hours after the extraction of a small stone, with delirium, and other nervous accidents.

7th. *The consecutive accidents* are numerous: viz., hemorrhage, infiltration of urine, ecchymosis of the scrotum, inflammation of the cellular tissue of the pelvis, pelvic phlebitis, peritonitis, cystitis, inflammation of the prostate, urinary fistulæ, impotence, incontinence of urine, reproduction of the stone.

Each of these accidents is described in full by the author. He considers inflam-

mation of the veins surrounding the neck of the bladder, as a consequence of lithotomy, much more frequent than is generally imagined, and gives several examples of it from his practice.

The accidents succeeding lithotrity are almost equally numerous; they are, pain and nervous symptoms, inflammation of the urinary passages, peritonitis, inflammation of the prostate and testicle, inflammation of the pelvic veins, laceration of the mucous membrane of the bladder, perforation of the bladder and infiltration of urine, retention and incontinence of urine, urinary fistulæ, fracture of the instrument in the bladder, reproduction of the calculus. Thus it appears that a great number of accidents are common to lithotomy and lithotrity, but from the nature of the two operations all those depending on a wound belong almost exclusively to the former, while in the latter they are chiefly connected with inflammation and irritation of the bladder and urethra, &c.

In comparing the accidents of the two operations M. Blandin divides them into those not affecting the urinary passages, and those which do, and draws the following conclusions.

First Class.

1st. Hemorrhage is often severe in lithotomy; it almost never occurs in lithotrity.

2nd. The rectum, peritoneum, and other important organs, may be wounded during lithotomy; the two former have been sometimes injured during lithotrity, but this is a very rare accident, and seems impossible with the newly-perfected instruments.

3rd. Infiltration of urine easily happens after one, and is often mortal; after lithotrity, such as it is at present, the accident can scarcely occur.

4th. Phlebitis often succeeds lithotomy; M. Blandin knows only one example following lithotrity.

5th. The same observation applies to peritonitis and urinary fistulæ.

Second Class.

1st. The pain and nervous symptoms are more severe in lithotrity.

2nd. Cystitis is more frequent and more severe than after cutting for the stone.

3rd. Inflammation of the prostate after lithotrity is much more dangerous, from the abscess, retention of urine, &c., it may produce, than the same accident following lithotomy.

4th. The bladder may be pinched and lacerated in lithotrity; never or rarely ever in lithotomy.

5th. A relapse is more to be apprehended after lithotrity.

Here is an impartial statement of the several advantages. How is one parallel to be balanced with the other, so as to obtain a judgment? By the clinical results, which are given in the third part.

The third part of the thesis contains a comparative examination of the cases which are more peculiarly fitted for lithotomy or lithotrity. The data taken to determine this question are, the physical nature of the calculus; the state of the genito-urinary organs, and individual peculiarities, as sex, age, constitution, &c. In this respect M. Blandin reserves more particularly for lithotomy,—1st. All cases where the calculus is large, especially when closely embraced by the bladder. 2nd. Flat calculi. 3rd. Very hard calculi. 4th. Encysted calculi. 5th. Calculi partly engaged in the urethra. 6th. Paralysis of the bladder. 7th. Considerable engorgement of the prostate gland. 8th. Cases where the kidneys or ureters are severely affected. 9th. Children up to the age of twelve or fifteen years. 10th. Perhaps all cases in the female. Lithotomy is easily practised on the female, and without danger. Besides, the experience of M. Bancal tends to show that lithotrity in the female is much more difficult than is commonly supposed.

Thus it appears that the circle of cases to which lithotrity is applicable is very narrow, when compared to lithotomy.

The fourth part of the thesis, a comparison of the clinical results, though perhaps the most important, was, from the nature of things, the most difficult to treat. M. Blandin did not neglect to point out the obstacles which embarrass this question. Thus it is impossible to obtain a set of cases belonging to the two operations, presenting conditions nearly similar; and it is unnecessary to remark how important this point is for a clinical comparison. Lithotritists choose all their cases with the utmost care; on the other hand, surgeons are forced to take in all cases of stone and operate indiscriminately. To avoid as much as possible errors arising from this, M. Blandin is forced to take cases operated upon at different periods and in different places, where the patients were presented by hazard rather than by choice; but this is not easy as far as regards lithotrity.

The two questions which the author proposes to decide by clinical results are:

1. Formerly, when lithotomy was less perfect than at the present day, and was exclusively employed, was the mortality

amongst calculous patients greater than at present?

2. What is the difference between the two operations, with respect to the success comparatively obtained?

In 1431 calculous cases (treated by lithotomy) taken from COME, DOUGLAS, CHESELDEN, MIDDLETON, MARCET, at the Hotel Dieu, and La Charité, the deaths were 346, the cures 1085, that is, as 1 to 3, plus a fraction.

In 124 cases of stone treated by lithotrity, reported by BANCAL, LARREY, and DOUBLE, from CIVIALE'S practice, and HEURTELOUP'S, we have 30 deaths, 86 cures, 8 in whom the stone was not removed; deaths to cures as 1 to 3, minus a fraction.

Thus from this statement the advantage is in favour of lithotomy, even when the cases were taken at a period when the operation was not perfect. To show the difference in a more striking point of view, M. BLANDIN takes a series of modern cases from DUPUYTREN, BALMAS, VACCA-BERLINGHIERI, and the Naples Hospital, 537 in number: deaths, 106; cures, 431; proportion of deaths to cures as 1 to 4, plus a fraction. Hence, among every four patients operated on for the stone at the present day, one dies, while the lithotritists lose 1 in less than three cases.

Finally, M. BLANDIN draws the following conclusions:

1. Lithotrity is a worthy rival of lithotomy, but can never replace it.

2. If employed in all cases exclusively, it is inferior to lithotomy.

3. That lithotrity by "ecrasement" is an operation superior to lithotomy.

4. That in the present state of the science, the results of "perforation and ecrasement," taken together, are not so fortunate as those of lithotomy.

5. That no one can tell what would be the result if lithotomists chose their patients as lithotritists.

6. The cure after lithotomy is, perhaps, more perfect than after the other operation.

ARGUMENTATIONS

AGAINST THE FOREGOING

THESIS OF M. BLANDIN,

BY MM. SANSON, VELPEAU, AND LISFRANC.

1. *Remarks of M. Sanson, and Replies of M. Blandin.*

M. SANSON began by claiming the attention of the candidate in the chair (M. Blandin), first to a personal fact, and then to certain observations by which he (M. Sanson) conceived the dangers and inconveniences of recto-vesical lithotomy were much exaggerated in the thesis under discussion. He proceeded as follows:—

In describing, or rather noticing, recto-vesical lithotomy, M. Blandin spoke of two methods, which he said were both imagined by M. Sanson; one of these was soon abandoned by the author; and the other, which was imagined at the same time in Italy by Vacca-Berlinghieri, might more properly be called urethro-vesical lithotomy. In this operation, the parts interested are, the anterior part of the anus, a very small portion of the neck of the bladder, the inferior portion of the prostate, and the urethra. Now in discussing the dangers of lithotomy, M. Blandin says, "In the first variety of recto-vesical lithotomy, the peritoneum may be equally injured; but as this mode has been abandoned by our colleague, it is unnecessary to dwell upon it. The vesiculæ seminales, the vas deferens, the ureter, and the spermatic ducts, may also be wounded; the first in the ordinary perineal operation, if the handle of the lithotome be too elevated, or if the incision be carried too far; the latter in recto-vesical lithotomy." And again, "One of the methods of perineal lithotomy, viz., the recto-vesical, exposes peculiarly to the production of impotence from the division of the seminal ducts." Now as to the introduction of the name of Vacca-Berlinghieri, there was an error of date, for the operation was mentioned in the thesis of M. Sanson long before it was described by, or received the name of, Vacca's method. Again, M. Sanson was far from recommending lithotomy by the rectum; he only detailed the manœuvres which should be followed, and described what was to be done, in case an operation by the rectum was necessary, or preferred by the surgeon. As to the dangers of dividing the vesiculæ seminales, the ureter, &c., and the consequent production of impotence, M. Sanson regarded them as imaginary. The incision is made directly on the median line, and cannot interest the ureter: it is never carried up high enough to divide the top of the vesiculæ seminales, and low down there is always space enough to pass between them. M. Sanson never saw a case of impotence occur after recto-vesical lithotomy.

M. BLANDIN commenced his answer to these objections, by confessing that the method described should be called the method of Sanson, and not of Vacca, as it is commonly denominated; but he insisted that he had a right to say the method was recommended by M. Sanson, and not merc-

ly described by him, as he had dwelt at some length on the advantages which the posterior median incision possesses over all others for the abstraction of large calculi; though M. Blandin saw these advantages, he could not help also noticing and discussing the disadvantages of the operation. As to the danger of injuring the vesiculæ, causing impotence, &c., M. Blandin made use of the words "exposed to this danger," and he thought it was an expression perfectly justifiable. In fact it was easily to be conceived how the vesiculæ seminales, closely applied as they are one to the other, especially at the lower part, might be divided by an incision which does not exactly fall on the median line, and the vas deferens may be included in the same accident. M. Blandin thought this must arrive very often. In performing the recto-vesical operation on the dead body, he has often seen the vesiculæ, &c., divided. Although he could not bring to mind a case of impotence following this operation, yet Senn quoted one in which the anterior extremity of the vesicula seminalis had been wounded, and he had himself dissected a body where the vesical end of the ureter had been cut through during the operation. The expression, "exposes in a peculiar manner," was mistaken by M. Sanson; he did not mean to say, exposes in a high degree, or frequently, but merely in a manner peculiar to it, i.e., by division of the vas deferens or vesiculæ seminales, just as lithotomy in the female exposes to incontinence of urine in a peculiar manner, viz. from division of the urethra.

M. Sanson's next objection was, that M. Blandin, in comparing together the statistical results of lithotomy and lithotrity, had neglected altogether to mention the sixty-seven cases operated upon by Cheselden without a single death.

M. Blandin answered to this, that it was impossible to assemble all the cases of lithotomy and compare them with those of lithotrity. For one would give a result of several thousands, whereas the science as yet possessed only a few hundred cases of lithotrity. M. Blandin considered he had gone far enough in citing 1431 calculous cases reported by Cosme, Douglas, Cheselden, Middleton, Marcet, and taken from the *Hôtel Dieu* and *La Charité* between the years 1720 and 1727. "The pain excited by lithotrity" (thus runs a passage of the thesis) "may manifest itself during three periods; that at the moment of introducing the instrument into the urethra, and especially into the meatus urinarius; during the manœuvres necessary for seizing the calculus; and during the destruction (*broiement*) of the stone." "The pains developed during the second and third periods of the operation, are to be referred chiefly to the neck of the bladder." Now, said M. Sanson, I think you have not done well to assemble together in one sentence, and to include under a general reproach, inconveniences which attach to three instruments so different in form and action as those of Civiale, Meyrieux, and Heurteloup. The pain produced by perforations, &c. should be distinguished from the very slight annoyance occasioned by a better constructed instrument, and each method ought to bear the weight of its own disadvantages. As to the latter sentence, the pain which is developed during the second and third periods of the operation does not depend, as you say, on the introduction of the instrument through the prostate and neck of the bladder, but because the calculus when seized is often drawn forcibly back against the neck of this organ. Now the reproach cannot be applied with any justice to the instrument of Jacobson.

M. Blandin.—If you examine my thesis, you will find that I was compelled to follow this method by the spirit in which the question was put. The objection would be sound had I been directed to oppose the different processes adopted in lithotrity against the different methods of extracting the stone; but this was not the case; I had to compare the two operations as a whole, and to compare together the general results, without descending into the details of each instrument, or discussing its advantages or disadvantages.

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2. *Remarks of M. Velpeau, and Replies of M. Blandin.*

M. Velpeau commenced by attacking the candidate, M. Blandin, for having bestowed excessive praise on lithotrity, which he had designated, in his thesis, "as an operation arrived at perfection with a magical degree of rapidity, and as a happy conquest of surgery, which should march as the sister and rival of lithotomy." At the same time that you have thus extolled lithotrity in an excessive degree, it seems to me, said M. Velpeau, that you have considerably exaggerated the dangers of lithotomy, and thus that the two operations are not placed by you in equal conditions, so that an equitable comparison may be drawn between them. Let us hasten to the proof of what has been said. I will enumerate all the inconveniences and dangers which you attribute to lithotomy: they are hemorrhage, division of the rectum (which you say may be opened during

the lateral or bilateral operations), of the peritoneum, of the vesiculæ seminales, &c.; laceration of the neck of the bladder; nervous affections; perineal phlebitis; incontinence of urine, or impotence, &c. Now I say that many of these accidents are very rare, and that some of them, as for example the nervous accidents, are of no importance whatever, and that you have consequently not given to lithotomy the rank which it should hold as an operation. You say that the hemorrhage which succeeds the operation for the stone is of two kinds, arterial and venous; I would simply ask you, do you think that venous hemorrhage is common after lithotomy, or capable of producing any dangerous accidents when it does arrive? For my part, I think venous hemorrhage is a very rare occurrence after lithotomy. I have performed a certain number of operations myself, and never saw any loss of blood from the veins which was at all alarming; besides, from what I have read in the works of the best surgeons, I think we are entitled to draw the same conclusion. In page 64 you mention lesion of the rectum as an accident that may probably occur. Now I would uphold that the bilateral operation, which you yourself take as the standard, does not expose us *at all* to division of the intestine. The same remark is applicable to injury of the peritoneum, which, in modern times, rarely if ever occurs.

M. Blandin.—You begin by asking me if I consider venous hemorrhage after lithotomy as a grave accident. I say yes, and I have often witnessed bleeding from the veins which was arrested with considerable difficulty. In the lateral operation on the adult or the old person, it is impossible to avoid dividing the bulb of the urethra to a greater or less extent, and this is the most ordinary source of the venous hemorrhage; but another source results from a division of the venous plexus which surrounds the neck of the bladder; here the branches of the veins anastomose frequently, and are endowed with a well-marked erectile disposition. This hemorrhage is very difficult to arrest, not only from that disposition, but from the depth at which the vessels furnishing it are placed; and I have more than once seen it require the operation of plugging the wound with lint, a circumstance which every surgeon will admit as grave, from the irritation and consequent inflammation that it may produce. It is not easy to determine the proportion in which the other accidents may occur, but the records of surgery show that they have happened even in the hands of excellent surgeons.

M. Velpeau.—I would also show, by your thesis, that lithotrity, as compared with lithotomy, is an inferior operation. In the statistical results which you have collected, you show that at the present day, and when calculous patients are treated by lithotomy alone, the deaths are to the cures as one to four and a fraction. On the other hand, in a series of cases where the patients are treated by lithotomy and lithotricy, the deaths are to the cures as one to three, minus a fraction. Hence it is evident that where the patients were all cut for the stone, more lives are saved than at present with lithotomy and lithotricy united, and this difference must be laid to the account of the new operation. Take a series of cases from the practice of any eminent surgeon. Without recurring to Cheselden, one of our own surgeons has saved sixty-two out of sixty-three patients by cutting for the stone. Can you say so much for lithotricy? Baron Heurteloup has cured only thirty in thirty-five.

M. Blandin.—The objection which you make is of force, if we apply it to the three methods of lithotricy; but I say, that if we regard only the method of Jacobson, we have an operation which is as favourable in its results as, and much superior to, lithotomy. In my calculations, however, I was forced to consider the three methods together, for, according to the spirit of the question to be treated, these three united, constitute what is called at the present day "*lithotricy*."

M. Velpeau.—I have already said that you exaggerated many of the dangers of lithotomy; I now lay it as a reproach, that you have passed over in silence some very remarkable accidents which attend lithotricy. Thus, for example, after the first or second sitting, the patient is often seized with a shivering fit, followed by an access of fever; some of the articulations inflame; pus is deposited in their cavity, or an organic lesion is quickly produced, and becomes a cause of death. These accidents are described as often taking place after lithotricy, but I do not find you have signalized them, though they are certainly sufficiently severe to deserve notice.

M. Blandin.—The accidents which you have just enumerated, never take place except when we have inflammation of the venous plexus surrounding the neck of the bladder; they are a consequence of phlebitis, and you will find them noticed under that head.

M. Velpeau persisted in regarding them as resulting from something different from phlebitis, as they were on some occasions manifested each time after the introduction of the instrument, while M.

Blandin said the objection was too vague, that the accidents were mere symptoms, and that when M. Velpeau specified some disease or injury, he was ready to reply. (Time for argument elapsed.)

3. *Remarks of M. Lisfranc, and Replies of M. Blandin.*

[M. Lisfranc, before entering seriously into the argumentation, indulged in a little skirmish on a sentence of Celsus quoted by M. Blandin, which he affirmed was incorrectly translated; and here we take this opportunity of remarking, that if many of the points objected by the argumentators seem of little weight, it depends on this circumstance, that the theses, although written in the short space of ten days, and at considerable length (that of M. Velpeau, for example, runs to 270 pages), really contain little which can be seriously objected to.]

M. Lisfranc.—I find the following passage in your thesis where Celsus's method is noticed:—"Mulieri vero inter urinæ iter et os pubis incidendum est sic, ut utroque loco plaga transversa sit." This you have translated or paraphrased thus:—"Celsus's method consists in making a transverse incision between the symphysis pubis and urethra, as far as the anterior parietes of the bladder." This is an erroneous translation, and gives a false idea of the method proposed by Celsus. He acted between the urethra and os pubis, not between the former and symphysis as you say. "Os pubis" means simply os pubis, and not symphysis; you will find this sense given by all the followers of Celsus, and by all his translators, as Albucasis, and a multitude of others; the objection however is slight, and only as an introduction.

M. Blandin thought he was correct in his translation, and entered into an explanation of the old idea attached to the words "os pubis," which he said meant all the bones about the symphysis, and the symphysis itself; besides, the passage could not be understood, unless taken in that sense.

M. Lisfranc objected to the author, that he had passed over without notice some of the accidents which accompany lithotrity; thus he neglected to state an important circumstance—viz. the pain which the patient sometimes suffers while the operator is manœuvring the calculus; but this phenomenon is frequently noticed. During the manœuvring of a calculus in a bladder, whose sensibility is already exalted by previous inflammation &c., the most violent pain is often experienced in the interior organ.

M. Blandin, after some hesitation, confessed the objection to be just, yet the observation was by no means so; for, in describing the *consecutive* accidents of lithotrity, he noticed this effect, saying, "the most intense agony was sometimes occasioned, sufficient to force from the patient piercing cries," &c. This incident shows how difficult it is to answer on the instant every objection, to carry as it were the whole thesis in the head, and be prepared to say whether such a point has been neglected, or such another correctly stated by the objector, &c.

M. Lisfranc.—In page 41 of your thesis, when comparing the pain produced by lithotrity with that resulting from lithotomy, you describe three periods of the former, in which the patient peculiarly suffers—viz. during the introduction of that instrument into the meatus urinarius, during the researches necessary for seizing the stone, and during its reduction (*broiement*). Now I say there is no pain produced during the broiement of a calculus, whatever the effect may be in other methods; the instrument is perfectly fixed, cannot injure or irritate the walls of the bladder, and gives no pain whatever during this part of the operation. We have a great number of facts to prove the truth of this, without referring to authors, said M. Lisfranc; I have myself followed a great number of cases, and I never saw much pain produced. I would therefore lay it down, in contradiction to you, as a general rule, that there is very little or no pain during the third period, when proper instruments are used. Again, your description of the accidents which follow lithotrity is exaggerated. In page 51 you say, "Such is by no means the state of things when, instead of being cut for the stone, the patients have undergone lithotrity—in fact, long after the complete destruction of the stone, the hypogastric region remains sensible; there is frequent desire to make urine, and pain in passing it, and for a long time they excrete glairy, or sometimes bloody urine." These accidents are by no means so much to be dreaded as you think, nor are they universal. It is a matter long since decided by experience.

M. Blandin was not disposed to concede this point; he had frequently seen nervous affections succeed the application of lithotritic instruments, as pain of the bladder, irritation of the urinary passages, &c.; and from all he had read, he was inclined to adopt the conclusion to which he had come.

M. Lisfranc.—(In his next objection,

M. Lisfranc succeeded in completely overthrowing his adversary.) You say, page 146, "that if childhood is but little favourable to lithotrity, old age, on the other hand, combines the greater part of inverse conditions—for example, largeness, moderate irritability of the bladder, dilatability and size of the urethra." I cannot agree with this doctrine; it seems to me altogether erroneous; for I have found that in the old person the prostate gland is almost always in a state of more or less considerable engorgement, which must of necessity produce narrowing of the prostatic portion of the urethra, and create an obstacle to lithotrity. I have, during the lapse of fifteen years, employed a great number of bodies for my course of practical surgery; we have often been supplied with subjects from the old man's hospital, and I have almost invariably found this engorgement, which can be anything but a favourable condition for the introduction of instruments into the bladder.

M. Blandin was considerably embarrassed by this. He could not deny the frequency of prostatic engorgement in the old patient, and was obliged to content himself with the reply, that the operation of lithotrity performed on people advanced in life was very often attended with success, and quoted the practice of Baron Heurteloup, where, in thirty-eight cases treated by percussion, twenty-three belonged to individuals from sixty to eighty years of age. Besides, in another part of the thesis, he had noticed engorgements of the prostate.

M. Lisfranc, finally, did not think that lithotomy in the female was so simple or so successful an operation as M. Blandin represented it. The statistical results indicated a contrary judgment. Frere Come, in thirty-three operations on the female, lost seven cases, and left six incomplete.

M. Blandin always regarded lithotomy in the female as an operation attended with little danger; he had seen about ten cases operated on in the hospitals and private practice, and only saw one death. Besides, all the masters in surgery, and all the best authors, consider it as very seldom fatal in the female; he was not aware of the cases published by Frere Come.

* In our analysis of the thesis of M. Blandin, we have omitted reference to some points which subsequently became the subject of controversy between the author and the other candidates, because, although they may possess interest when mooted in the discussion, they did not, by their importance, claim a place in a useful digest of the thesis.—Ed. L.

THESIS OF M. SANSON.

(*Sustained July 25th.*)

ON THE ADVANTAGES AND DISADVANTAGES OF IMMEDIATE UNION OF WOUNDS.—Pp. 113.

This subject broaches a point which is greatly in dispute between the French and English surgeons. The favour with which Hunter's doctrine is received and followed up in England, constitutes the chief difference of practice between the surgeons of both nations. Let us therefore hasten to see in what point of view it is regarded by one of the best practitioners in the French capital.

M. Sanson commences by a definition of immediate union, which he calls "the operation by which the surgeon places in contact the opposite points of a wound, to determine adhesion without suppuration, or with the least suppuration possible," and then proceeds to expose the phenomena accompanying wounds without suppuration, and compare them with the accident of suppurating wounds, in order to determine the relative advantages, &c.

Chaps. I. II. & III.—The first and second chapters contain a good description of the local and general phenomena exhibited by wounds which unite without suppurating. The third enumerates the conditions favourable to union by the first intention, which are,

1st. The existence of life in the two surfaces, and a free circulation.

2nd. The wound must be recent; the shorter time it has been exposed to the air, the more apt it is to heal without suppuration.

3rd. The wound must be exempt from contusion. However, says the author, very justly, the action of a contusing body, though even violently applied, does not always render union by the first intention impossible. Amongst the wounded of July 1830, M. Sanson treated a young man who had the middle of the thigh traversed near its centre by a ball; there was no eschar; the wound united in a few days by the first intention, and the two orifices alone suppurated. Huter and Larrey have seen several similar cases.

4th. Foreign bodies in the wound are an obstacle.

5th. The conditions of age influence the facility of union or non-union; it is more easy the younger the individual is.

6th. Conditions of season and climate; witness the brilliant success obtained in Egypt by Baron Larrey and by Clot Bey.

7th. Finally, a most important condition

is, that the surfaces of the wound be retained in *immediate* contact, during the whole time necessary for the organization of the coagulable lymph.

Means for favouring union by the first intention:—1st. Situation of the parts; 2nd. Agglutinatives; 3rd. Bandages; 4th. Suture. An examination of the cases in which suture is applicable. Surgeons generally agree to reject the suture from the treatment of wounds of the limbs; however, Delpech has lately employed them after the great operations, without the inconveniences generally attributed to them.

Chap. IV.—General means proper to assure the success of immediate union. It is not enough to place the surfaces in contact; the surgeon must endeavour to remove all complications which may disturb the process of union. These most commonly are,—pain, excess or absence of inflammation, general debility, derangement of the primæ viæ.

Chap. V.—Local Phenomena of Suppurating Wounds.—Three main circumstances may vary the march of a suppurating wound, without changing the essential phenomena. These are, 1st, A considerable separation of the edges of a simple wound, abandoned to itself; 2nd. An extensive loss of substance; 3rd. Contusion or disorganization of various tissues.

Here follows a full description of the phenomena observed in these three cases: The change of aspect in the wound; the formation of a thin fine membrane at the bottom, which soon becomes the pyogenic membrane; the formation of small fleshy vascular masses called granulations; the contraction of the wound, depending on the remarkable retractile property of the granulations; cicatrization; and the union of the divided tissues by a thin layer of a fibro-cellular matter, the "tissue inodulaire" of Delpech. So much for the first care. In the second, the process is slower, and varies according to the different tissues; in the third, the elimination of the disorganized parts must take place, before any attempt at healing goes on.

Chap. VI.—General Phenomena of Suppurating Wounds.—1. Development of the traumatic fever, or during a later period the patient is exposed to accidents of a dreadful nature, which have been attributed in turns to phlebitis or purulent absorption. 2. Action of the wound on the brain or general economy, wasting the force of the patient, occasioning hectic fever, &c.

Resumé.—From the preceding observations it follows, that when a wound is healed by the first intention, we obtain the following advantages:—1. The solution of continuity is reduced at once to the smallest limits. 2. The united parts are withdrawn from the action of the air, &c. 3. Little local inflammation, pain, &c. 4. The treatment, of short duration, is not likely to derange the health of the patient. 5. After a cure the cicatrix is linear, and does not impede action of subjacent muscles.—In suppurating wounds we have as disadvantages,—1. The long exposure of the wound to the air, &c. giving rise to pain, irritation, &c., and, as a consequence, severe traumatic fever. 2. The danger of its reaction on the head or principal viscera; however, says M. Sanson, in the greater part of cases, we have merely the constitutional fever. 3. Finally, the accidents of too great suppuration, and the length of the disease. As to the dangers of *phlebitis*, he proposes to speak of it presently, noticing, however, that the accident most frequently occurs after amputations, and in cases of wounds combined with fracture. Besides these inconveniences, there is the danger of hospital gangrene coming on, and the extent of the cicatrix.

Here are decided advantages of union by the first intention, considered generally. But to decide the question of the thesis with any accuracy, it is necessary to establish some division of wounds, and consider union in each; the author, therefore, distinguishes, 1st, wounds properly so called; 2nd, wounds made by the surgeon, excepting amputations; 3rd, amputations.

Chap. VII.—Union considered in Wounds, properly so called Historic view.—Union by the first intention employed by Hippocrates, Celsus, &c. afterwards abandoned the origin of a mixed method, which consisted in uniting a great part of deep wounds, and maintaining the other part open, by means of a tent, which might favour the discharge of the fluids, and avoid the inconveniences arising from their stagnation.

It is now generally admitted, that union by the first intention should be tried.

1. For all wounds produced by cutting instruments, whenever the edges can be brought together, and the wound does not contain a foreign body, &c. The lesion of a considerable artery is no obstacle, for the traject of the thread alone may suppurate.

2. For contused wounds. When the contusion is feeble, or not violent, it affects only the superficial parts.

A contusion, though it might be judged enormous from the cause producing it, does not always contra-indicate immediate union; and here the author draws a practical distinction of value. Bodies projected by powder, do not always produce

wounds which represent the form and size of the projectile; they sometimes give rise to extensive lacerations, irradiating from the wound itself. Here immediate union may be tried. The author has seen M. Larrey, in cases where one or even both jaws have been carried away, and where all the soft parts of the face were horribly lacerated, succeed in reducing the wound to a simple one, by cutting away the edges and angular projections, &c.

3. Wounds arising from divulsion. When a portion of the body has been suddenly torn away, the only way to diminish the extent of the wound is to apply at once all the parts that can be brought together.

Immediate union should not be tried,

1. In poisoned wounds;

2. In incised wounds, if they are so irregular, &c., that the opposite surfaces cannot be brought together without leaving intervals, unless the intervals be so placed that any fluid collected may be evacuated by a counter-opening;

3. Where there is a foreign body in the wound or effused blood &c. which cannot be completely removed;

4. In cases of injury to a duct, where union would produce effusion;

5. In cases where it would require great force to bring the edges of the wound together;

6. Gunshot-wounds (as a general rule) and contused wounds. Having thus established the indications and counter-indications of immediate union, M. Sanson describes the rules of dressing. In all cases, he advises to wait until the flow of blood be completely arrested before the wound is closed; he also cuts off one end of the ligature; where the wound is extensive and the ligatures numerous, he assembles them in different bundles to be brought out at the corresponding angles. In order to moderate the inflammation, M. Sanson praises much the application of cold water for three or four days, so as to keep up a constant low temperature, joined to humidity.

These generalities laid down, the author examined wounds in the different regions of the body.

Wounds of the Integuments of the Skull.—Simple incised wounds to be united at once, and covered with a compress dipped in cold water. When the wound presents a flap, the base of which is downward, the point generally retracts and leaves some part of the bone denuded. Here the suture should be employed. Petit recommended making a counter-overture at the base of the flap to prevent the accumulation of pus, &c., but M. Sanson does not think that necessary. But these wounds are often attended with dangerous complications, as intolerable pain from incomplete division of the nerves, inflammation extending under the aponeurosis, and terminating in suppuration, denudation of the skull, meningitis, &c. The development of these accidents may, in many cases, be prevented by leeches, applied behind the ears for several days, and sinapisms to the lower extremities, with laxatives or diluents to the intestinal canal; but if in spite of these means inflammation declares itself, we should not hesitate to remove all the means employed for union, and to divide the tissues down to the very bone.

Wounds of the Face and Neck—penetrating Wounds of the Chest.—When these are accompanied by effusion of blood into the chest, surgeons are divided on the treatment. Paré advised keeping the wound open, to prevent the accident of suffocation, &c.; others, amongst whom is one of the judges, act diametrically opposite, and close the wound in order to stop the hemorrhage. M. Sanson does not attempt to resolve this question or give a decided opinion.

Penetrating Wounds of the Abdomen are to be united immediately whenever the viscera are free, easily reduced, and preserve their integrity.

Wounds of the Limbs.—Under favourable conditions, all these wounds should be united by the first intention. Larrey has proved that incised wounds penetrating into joints, and even injuring the bone, may be cured by immediate union. He divides at first, to discharge any blood effused into the cavity of the joint, removes any portion of bone or cartilage injured, and then fixes the limb immoveably. In this way he cured, at Cairo, a wound of the shoulder-joint. There was no suppuration, and the limb preserved its motions. A more important question is to decide whether or not we ought to try immediate union in wounds complicated with fracture, and surgeons are much divided in opinion upon this point. The numerous cases of unsuccess where union has been tried, induce many to prefer amputation. However, there are certainly cases of exception: thus whenever the fracture and wound are free from contusion, or when the fracture is indirect, and the wound is produced by the fragments being driven outwards, it is easy to reduce the injury to the conditions of a simple fracture. M. Sanson has treated several cases of compound fracture of this kind successfully, by closing the wound and employing cold to prevent inflammation. In all other cases it is ge-

nerally admitted that amputation is required; however, the remarkable results obtained by the immoveable apparatus of M. Larrey, again render the question undecided, and new facts are required.

PART II.

On the Immediate Union of Wounds resulting from Surgical Operations, except Amputations.—Immediate union is applicable to a vast number of surgical operations, which the author examines, but which we cannot even enumerate here. The cases to which it is not applicable are, according to M. Sanson,

1. When the operation has been performed to evacuate a fluid, or where a natural duct is obliterated, as after trepanning for effusion, bronchotomy, &c.

2. When it is right to obtain cicatrization from the deep towards the superficial parts, as in fistulæ in ano.

3. When a foreign body is not extracted by the first incision made, but it is necessary to operate a second time.

4. When it is probable that suppuration is inevitable.

5. When a duct is opened and the effusion of its fluid is inevitable.

6. When we wish to destroy adhesions, bridles, &c.

8. When it is necessary to re-establish a duct or an obliterated orifice.

PART III.

On the Advantages and Disadvantages of Immediate Union after Amputations.

From the preceding brief sketch of the opinions detailed by M. Sanson in the thesis before us, it will be seen that the practice of French surgeons, with respect to the union of wounds, &c., differs very little from that followed in England. In the treatment of amputations, however, the difference is much more marked, and if success be taken as a criterion of the two methods, the superiority undoubtedly rests with English practice. We have no means of obtaining the results of amputations performed at the London hospitals; but we may say, without fear, that the mortality, on an average, has never amounted to one-third of those operated upon,—the result of the practice of two of the most celebrated surgeons in France, MM. Dupuytren and Roux.

The honour of applying immediate union after amputations belongs, says M. Sanson, to Lowdham; the process was improved by Cheselden in England, and by Petit and Louis in France, who gave a better form to the stumps; it soon became the favourite practice in England, and also in Germany, where it was vigorously advocated by Langenbeck and Graefe. In Italy the partisans and opponents were nearly equally divided. In France it was adopted by Desault, and practised by Baron Percy, who, after the affair of Neubourg, obtained wonderful success by this method (ninety-two amputations, eighty-six cures). At the present day, in France, it is recommended by Professors Dubois and Richerand, and Maunoir of Geneva; while Pelletan, Boyer, and Larrey, reject it; MM. Dupuytren and Roux employ it only in a few particular cases.

To what are we to attribute such a difference of opinions? Is the question resolved by the results?

In a thesis of M. Avery, 353 cases of amputation are collected from the practice of Alanson, Freer, Kenedy, Lucas, Percy, Lawrence, Maunoir, Dubois, and Hammick; the number of deaths were eighteen, or nearly one-twentieth. Again, in ninety-five amputations, thirty-eight treated by immediate union by M. Roux and Dupuytren, (who lost one-third,) and fifty-seven treated in the same manner after the siege of Antwerp (one-sixth lost), the average of deaths was about one-fifth; and if we examine the practice of Alanson, Lawrence, Percy, &c., we find that some did not lose a single patient in thirty-six operations, while others lost one-ninth, one-tenth, one-fourteenth, &c.

If we add the cases of Roux, Dupuytren, and Larrey, to those quoted above, we have 448 operations and thirty-eight deaths, or one-twelfth.

Such are the statistical details given by M. Sanson, but from which he draws no conclusion whatever; he seems to us, however, to have neglected a most important element of comparison—viz. the statistical results of amputations treated by the second intention, which he could easily have had from the Hôtel Dieu, La Charité, La Pitié, &c. If we mistake not, M. Dupuytren, who treats his patients by a mixed method, loses one-fourth, a proportion very much more unfavourable than one-twelfth.

We now arrive at the termination of the thesis, in which the author gives a resumé of the advantages and disadvantages of immediate union after amputation.

The advantages have already been noticed under the head of wounds in general; it is unnecessary to recur to them.

The inconveniences evinced by the opponents are:—

1st. *Hemorrhage.*—Pelletan has much insisted on the danger of bleeding, which he says is more frequent after union by the first intention. M. Sanson regards this objection as of little value. Now-a-days the ligature is so perfected, that any danger from its relaxation, or premature division of the vessel, is slight. Besides, the inferior angle of the wound may be left open, so as to give exit to any fluid.

2nd. *Purulent Collections.*—This also is an objection of Pelletan, which the author shows to be unfounded.

3rd. *The sudden Suppression of a Long-standing Suppuration.*—This is not applicable to amputations practised for recent injuries, &c. Where the suppuration is of such a kind as to improve the general health (and this may happen), it should not be suddenly suppressed.

4th. *Phlebitis.*—This M. Sanson regards as the most important point of the question: viz., to determine whether immediate union is more favourable to the development of phlebitis than the method of allowing the wound to suppurate, because the greater number by far of patients who die after amputations in the hospitals, are carried off by phlebitis. This accident may occur after any kind of dressing, but it remains to see if one species may not favour it more than others. Two circumstances seem more particularly to predispose to phlebitis: viz., suppuration, and the stagnation of purulent matter. Now from the nature of an amputation, &c., in some suppuration at least is inevitable, and it is also a necessary consequence that the pus stagnates more or less; the skin has always a greater tendency to unite than the deeper parts, the pus is retained, alters in quality, and is absorbed; hence with all its advantages, immediate union has the great disadvantage of placing the wound in circumstances most favourable to the development of phlebitis. On this account many French surgeons place a slip of lint all along the lips of the wound, and endeavour to heal the deep-seated parts first. This *mixed method*, which M. Sanson regards as the most rational in the present state of surgery, is that employed by Boyer, Larrey, Roux, Dupuytren, &c. We cannot hope to obtain by it the rapid cures which sometimes result from the method of primary union, but these rapid cures are rare; the greater part of the cases require three weeks or a month, and the mixed method demands very little more time.

Such is a brief analysis of M. Sanson's opinions on union by the first intention. We have not now time to discuss them, but leave our readers to judge whether, as he asserts, immediate union exposes more to phlebitis, than union by suppuration. The doctrine laid down in the conclusion of the Thesis seems to be universally admitted in France, for not one of the argumentators objected to the fundamental proposition by which immediate union of the whole stump after amputations is rejected. The French surgeons, then, endeavour to heal by the first intention the bottom of the wounds, while they force the surface to suppurate.

(*To be continued*).

THE LANCET.

London, Saturday, Aug. 9, 1834.

The managing Committee of *Christ's Hospital*, alarmed at the discussions which have recently taken place relative to the management of that institution, have, it is said, taken legal advice, in order to ascertain the extent of their responsibility either to the Parliamentary Medical Committee, or to any of the established tribunals of the country. If the conduct of these managers had not been marked by absurd practices generally, we should give no credit to this rumoured absurdity; but after the ridiculous, not to say pernicious, mode in which they have conducted the affairs of the establishment, we are almost inclined to give credence to reports of any act of folly that may be imputed to such a body. It is further alleged, in certain quarters, that Mr. Warburton is disinclined to scan with a penetrating eye the medical department of *Christ's Hospital*, on the ground that the entire proceedings of that establishment were subjected to an examination before the charity-commissioners, whose report has, for some years, been before Parliament and the country. Not having seen a copy of the evidence elicited by those commissioners, we are unable to

form an opinion as to whether the Medical Committee of the House of Commons ought to be satisfied with the investigation which has already taken place, or whether the business of the medical department of the great and important charity in question should be exposed at this time to a scrutinizing analytical ordeal.

We cannot, however, avoid remarking, that when the charity-commission was instituted, no direct reference was made to the *medical* concerns of our public charities, and we believe that nothing was said in Parliament relative to any acknowledged mismanagement of our hospitals. At that time the abuses of our medical charities had not been discussed in a single public print, and it was, therefore, unknown to the legislature, that such enormities prevailed in establishments which had been founded by some of the noblest philanthropists that this country has ever produced.

If then the charity-commissioners commenced their labours with minds wholly unprepared to investigate transactions which were strictly medical, it cannot surprise any one to find, in the evidence published by them, that the medical departments of our public charities have, in no one instance, been properly investigated. We do not assert that the evidence actually will denote such a deficiency, but we contend that if an adequate inquiry into medical abuses was not made, that fact cannot be regarded as extraordinary, considering under what expectations and conditions the exertions of the charity-commissioners were commenced. If we mistake not, Mr. BROUGHAM, to whose labours in the House of Commons the commission owed its origin, at the time of agitating the question, referred not, even by inuendo, to the mismanagement of medical charities, but directed the whole force of his arguments against the mismanagement of the funds which had been bequeathed to the public seminaries. That commission has now existed for many years, but we have not seen a single page of any report, or an extract from any evidence, that may have been published by the commissioners.

During the last session of Parliament a commission was appointed to investigate the affairs of the "*municipal* corporations" of the country, which words are generally understood to mean those corporations which exercise functions in immediate connexion with *commerce*. Now it has necessarily happened, that the *medical* corporations, being all of them regarded as *charities*, have not fallen within the province of the *municipal corporation commissioners*, and as it is to be feared that they, either wholly or partially, escaped the observation of the *charity* commissioners also, the *medical* branches of those corporations stand a fair chance of being altogether shielded from inquiry, unless Mr. WARBURTON, with his characteristic zeal and discretion, should deem it to be a portion of his public duty to bring the medical practice—in a word, the entire medical concerns of those institutions, before the members of that efficient body, of which he is the able chairman. What can form a more legitimate object of inquiry than THE MEDICAL PRACTICE OF OUR HOSPITALS, when it is known that students, by the regulations of the Colleges, have been THRUST by hundreds into those institutions; and, further, when also it is ascertained as an established fact *that the treatment of disease resorted to in those establishments necessarily influences, in a great degree, the treatment which is adopted by medical practitioners throughout the country generally.*

If the medical departments, then, of *Guy's*, *St. Thomas's*, *St. Bartholomew's*, and other hospitals, are brought before the Committee, why should that of *Christ's*

Hospital be allowed to escape scrutiny? Is it of no importance that an annual revenue, equal in amount to forty thousand pounds, should be employed *with prudence* medically, as well as scholastically? Is it a matter of indifference whether the boys are sent forth into the community enjoying health, or labouring under disease? Is it of little consequence whether twelve hundred boys, for whose mental acquirements an ample, noble, provision is made, should be supervised by competent medical practitioners? We implore the parliamentary committee, therefore, to institute a rigorous inquiry into the medical concerns of *Christ's Hospital*, —to ascertain in what manner the *ringworm* has been treated in that establishment, how long it has existed there, what effects have been produced by the disease on the tuition and constitutions of the children,—of what description is the diet allotted to the children,—and in what manner the medical officers receive their appointments. We blush to state, that the governors of this splendid charity, amounting to nearly four hundred in number, give up their authority and privileges to a house-committee, the members of which move, on all occasions, as though they were a self-elected body, and could act independently of any authority, either in or out of the hospital.

An article under the title "Medical Education in Dublin" has been published in the "Journal of Education," and, as might be expected from the subject, has attracted some attention among the medical profession of Dublin. It is so calculated to mislead, and to mislead on a point of so much importance, that we consider it necessary to correct some at least of its errors and misrepresentations. In doing so, we must acquit the conductors of the journal in which it appears of any intention to mislead their readers. We presume their object to be what they profess—the diffusion of truth; and believe that they must have been imposed on in this instance by some designing person, who had in view his own and the interests of the particular party to which he belongs. We need scarcely remind men engaged, as the conductors of the Quarterly Journal are, in the business of recording and devising the best means of education, that a greater boon could not be conferred on a young person entering on the study of the medical profession, than that of pointing out to him, honestly, the manner and place in which his objects may be attained with the greatest ease and certainty. Such advice and information are the more required at a time when the viciousness and complexity of our systems of education render it difficult for the student to understand them, and to avoid the injurious consequences of mistaking his way in the first steps of his progress. With the clue of an Ariadne, he would want the wisdom of a Mentor to guide him in safety past the traps and pitfalls with which this absurd system abounds. It was apparently with a view to supply this advice and information to the English student in the Irish capital, that this insidious writer undertook his task in the Quarterly Journal. How he performed that duty we shall presently discover.

The writer ingeniously commences by giving an historical account of the origin of the schools of physic and surgery in Ireland, and successfully contrives thus to throw an air of impartiality over the subsequent parts of his narrative. The historical was neutral ground; he might there indulge in an episode of candour, without detriment to the main object of his design. He very soon, however, declares himself. The schools of physic and surgery being traced to their incorpora-

tion, it was time to turn them to some account. "The first acts," he says, "of the "newly-chartered College of Surgeons "were directed to the establishment of "such *a system of education* as would en- "sure a competent body of practitioners "for the public good!" This excellent system, which the writer speaks of in such terms of approbation, consisted in nothing more than an apprenticeship of five years to a surgeon! This was the system which the College, in its wisdom and philanthropy, intended for the public good and the competent education of practitioners. Had he said that they intended to fill their own pockets with apprentice fees, he would have been much nearer the truth. Somewhat further on he adds, "Under the guidance "and instruction of his master, the pupil "was to be prepared to undergo an exa- "mination for the College diploma, at the "expiration of his apprenticeship!" What will the reader think of the veracity of this writer, when we assure him that nine-tenths of the "masters" in Dublin never bestowed a thought on the instruction of their pupils; and that, instead of the apprentices being prepared for an examination at the termination of their indentures, they had to pay large fees to persons qualified for preparing them for their diplomas, which they were seldom able to obtain for some years after the expiration of their apprenticeship. Yet, notwithstanding the palpable and notorious absurdity of this practice, the writer in question has the hardihood to assert, that "although, on the whole, it was by "no means free from objections, still it "was found to work well, until the power "and connexions of the College had in- "creased."

No wonder, indeed, there should be objections to a system which was supported by the most profligate enactments and deceptions that ever disgraced the statute books of any country or college; for the maintenance of which, it was necessary to reserve by Act of Parliament most, if not all, the valuable situations in the medical profession in Ireland. But the *reasoning* of this writer is on a par with his *facts*; a little lower down, he says, that "with the "aid of pecuniary grants from Government "they built a theatre, and other accommo- "dations for instruction in anatomy, sur- "gery, midwifery, surgical pharmacy (!) "and botany." There was, no doubt, a professor of midwifery, but he forgets to inform us of what kind were his lectures. The unique name which the College, in its learning, invented we believe for the chair of pharmacy, is sufficiently explanatory of the sort of discourses which were delivered from it; and as to botany, we do not believe that a professorship for instruction in that science was ever instituted by, or that a course of lectures on that branch of natural history was ever delivered in, the College at all! In fact, there is scarcely a sentence in this document which can be depended on by its readers. Some passages are so extraordinary, that we cannot avoid pointing them out to public notice. "The tend- "ency of such a system," he says, "was "naturally to excite a considerable hos- "tility to the College on the part of a "large body of men, who did not happen "to possess certain advantages in their "younger days!"—that is, who did not enjoy the peculiar good fortune of having paid some surgeon or other an "apprentice fee," for which he was to receive nothing in return in the way of instruction. "Hence," he adds, "the College was led "to adopt measures for altering the con- "ditions of admission into their body, and "in 1826 they obtained a new charter, "with such alterations as enabled the "Court of Examiners to exercise a less "restrained judgment on the admission of "candidates." It was no such motive, as is here asserted, which actuated the per-

sons concerned in obtaining a new charter; they knew well that at any moment the majority of the College could by a vote annihilate the old school of the College, for, in the old charter, there was no clause requiring the support of a school in connexion with that body. To avert this evil, *in enlightened times*, Mr. COLLES and his associates drew up a charter, which renders it in part imperative on the College to maintain a school of surgery, that is, to provide offices and other accommodations for a set of professors who contribute nothing to the funds, and little to the reputation of that body. This was the true origin of the new charter; and instead of being an act of liberality, it was the essence of illiberality itself. We wish to call particular attention to the following passage, as showing the *animus* of this veritable historian of the medical schools of Dublin. "In the members is vested the whole management of the affairs of the College; they annually elect a president and vice-president, &c. &c. So long as the College consisted of a few members, this manner of managing its affairs was found sufficiently advantageous; but, latterly, when the number of members has undergone a considerable increase, some inconvenience, if not positive disadvantage, appeared to result from the arrangement, and, we understand, some alteration in this respect is contemplated!" "We know," he adds, "that some years ago, a distinguished member of the College did propose that the management of its affairs should be placed in the hands of a Council, but although this proposition was supported by most of the senior members, it was rejected." We can assure this masked friend of the College, that there is an arrangement in contemplation, but that it is not proposed, by the "senior members," as he says. He will find our reasons for making this statement fully developed in the evidence given by other members of the College before the Medical Committee. It is of course impossible that the present system of governing the Dublin College can be continued after the exposure of its abuses which has just taken place. We must hasten, however, to the conclusion of this article, having only space to remark on one or two more of its false statements, of which the following are remarkable instances. "In addition," he says, "to the museum and library of the College, the students have access to a valuable museum and a lending-library peculiarly devoted to the interests of the school!" From this ambiguous statement it would appear as if the students were permitted to frequent the museum and library of the College; but permission was really never granted, not even to the licentiates, to enter the library, without a fee of three guineas! and with respect to the student's *special* lending library, such a thing was attempted in the College, but has now fallen into disuse. All this, however, falls far short of the ridiculous attempt to write an account of the state of medical education in Dublin, in which notice was taken of the two chartered schools only! What would be thought of the writer who undertook to give a statistical account of the manufactures of Manchester or Birmingham, who limited himself to a description of one or two shops in those places? The writer in the *Quarterly Journal of Education* stands in a still more reprehensible predicament, having in the laconic notice which he gives of the private schools (consisting of a single sentence!) committed an error of fact, and we have no doubt a wilful one, for he must be aware that the schools which he names as the principal private schools in Dublin, are always below another school (the name of which he omits) in the number of its pupils.

PROFESSOR MACARTNEY.

To the Editor of THE LANCET.

SIR,—The advertisement inserted in the newspapers, and which was copied into the *London Medical and Surgical Journal* of the 12th inst., does not state correctly the law regarding the professorships in the school of physic in Ireland. It would appear by the advertisement, that the Board of Trinity College might, if they had thought fit, have continued the present professor of anatomy and surgery for another period of seven years, without the form of an election; whereas the School of Physic Act directs, that no professor can hold his office beyond fourteen years, without being again elected to it. It was therefore in conformity with this law, and not by any act of the Board, that the professorship became vacant, to which I was re-elected on the 29th inst., although the utmost pains had been taken to create a prejudice against me, by grossly false and absurd representations of the evidence I gave before the Parliamentary Committee on medical education.
Your obedient servant,

JAMES MACARTNEY,
Professor of Anatomy and Surgery in Trinity College, Dublin.

Dublin, July 31, 1834.

EXPENSE OF OPPOSING THE PROPOSED LONDON UNIVERSITY CHARTER.

To the Editor of THE LANCET.

SIR,—I beg to inclose you a circular, which has been sent round to all the lecturers who signed the memorial presented to the Privy Council, against the prayer of the London University for a charter. I will put you in possession of the facts relative to the manner in which the memorial was got up, and leave you to make your own remarks on the present demand made upon those who signed that memorial.

You are, perhaps, aware, that though summonses were issued to almost all the lecturers in town, to attend the meeting mentioned in the circular, as having been held at Dr. HUE'S on the 28th February last, not more did actually attend than about twenty, all of them (with, I believe, two exceptions) Fellows of the College of Physicians and Surgeons lecturing at the great schools attached to the various hospitals. The reason why the attendance of those who were summoned was not more numerous, is to be sought for in the names of those who convened the meeting, which made the liberal lecturers distrustful of its ostensible object; they, therefore, stayed away, and heard nothing (at least officially) of what had passed at the meeting, till some months after, when the memorial before alluded to was handed round (principally by Dr. Macleod) to all the lecturers in town, as well to those who had attended as to those who had not attended or sanctioned the meeting just mentioned, and they were all earnestly solicited to add their signatures, which, concurring in the reasons set forth in the memorial, they had no hesitation in doing, not a word being uttered to lead those who signed to believe that they were expected to contribute anything towards the legal expenses, which they imagined would be defrayed by the parties who had got up the memorial, and who were most deeply interested in the question, in a pecuniary point of view.

The memorial was thus signed by above seventy lecturers, who refused to attend the meeting, and who did not sanction it or its acts. From this time to the date of the "circular," no communication of any sort was made to them, and they were even officially ignorant that the prayer of the memorial had been granted; neither was their consent asked or given to the ulterior steps which were taken by the sub-committee, whose appointment they had not sanctioned, and to whom they had delegated no power of any kind. What was their surprise then on perusing the circular which gave them the information that they were *required* to pay 4*l.* 10*s.*,—the circular not even concluding with the form customary among gentlemen, the sub-committee simply signing their names, and thus giving the precious production the character of a royal mandate, and adding insult to its impudent dishonesty. To show the absurdity of the demand thus made, it is only necessary to carry out the principle a little further, and to suppose, that instead of having expended 440*l.* 15*s.* 6*d.*, they had seen fit to expend 440,000*l.*; will any sane man contend that the lecturers who had signed the memorial praying to be heard by counsel, but who were not even informed that their prayer had been granted, would be responsible for the subsequent acts of a sub-committee, whom they had no voice in appointing, and to whom they had neither directly nor indirectly imparted any authority? The thing is too absurd.

Let us now pause for a moment to expose the deep-laid plan of this committee, who knew full well that their memorial, signed only by themselves, would receive no attention from the Privy Council; equally well did they know, too, that if an

open statement had been made to those lecturers who were solicited to sign, that they were to involve themselves in legal expenses, the great majority would refuse. To secure both objects, therefore, viz. a numerously-signed memorial, and an extended number of participators in the expenses, no other plan suggested itself, or was at all feasible, than the unworthy one which they pursued. You will not be surprised to learn that the attempt has failed, and that the intended victims will keep their breeches' pockets close, so that our *worthy* diplomatists will reap nothing but the contempt which they so rightly deserve. I am, Sir, your obedient servant,

FIAT JUSTITIA.

August 4th, 1834.

Letter of the Sub-Committee of Lecturers, &c.

"July, 1834.

"Sir,—On the renewal of the Petition of the London University to the King in Council for a Charter, with the power of conferring degrees in physic, &c., a meeting of the hospital physicians and surgeons, and of the teachers of the various medical schools in London, was held at Dr. Hue's on the 28th day of February last, at which meeting we, the undersigned, were named as a sub-committee for preparing and presenting a memorial on the part of the whole body, praying that the privileges which the London University was endeavouring to obtain might not be granted, and that we might be heard by counsel before his Majesty's Privy Council in support of our prayer. The expenses that have been incurred by the defence of our cause before the Privy Council greatly exceed what we had anticipated; but we find that the expenses of the College of Surgeons, in opposing in the same manner the prayer of the London University, have been precisely the same. The whole expense incurred by us is 440*l.* 15*s.* 6*d.*, and the number of gentlemen who signed the memorial praying to be heard by counsel is 98, so that the contribution required from each individual is 4*l.* 10*s.* You will, therefore, have the kindness to transmit the amount to Sir George Tuthill at your earliest convenience.

"The accounts lie at Sir George Tuthill's, and are open to the inspection of every gentleman who signed the memorial.

"GEO. L. TUTHILL.
THOMAS WATSON.
WM. LAWRENCE."

CHRIST'S HOSPITAL.

To the Editor of THE LANCET.

SIR,—I feel much obliged by your noticing what you justly term "an election under suspicious circumstances of a physician at Christ's Hospital." The plain unvarnished tale is this:—Dr. Roberts finding a special committee was appointed to inquire into the efficiency of the medical department of that institution, with more wisdom than his colleagues sent in his resignation of an almost sinecure place, having had eighteen patients in five years, seven of whom died, and received 300*l.* The special committee feeling satisfied that the health of the children would be better looked after under the care of a talented resident general practitioner, than a venerable apothecary in his 80th year, contemplated recommending such an arrangement to the Court, and then all we should require would be a consulting physician and surgeon; and these, they felt convinced, might be had by soliciting the honorary services of gentlemen. With this in view, the committee forwarded to the president a resolution, "that no election of a physician should take place pending the inquiry." The president did not attend the court, or forward the resolution to the treasurer, who in his absence presided. An unofficial copy of the resolution was put into the hands of the treasurer, by the clerk who had attended on the special committee; this he treated with a degree of contempt commensurate with the good will he bears the committee, and although strongly enforced by every member of that committee present, the election was carried in a court of forty-six governors, by a majority of twelve; the aforesaid members of the special committee not voting, and full sixteen, composed of almoners, their relatives, and aspirants to that honour, were on the other side. Thus Dr. Hue was elected, but surely such a pluralist of appointments will never, it is supposed, stand in the way of the recommendation of the special committee being carried into effect. Surely if any child had been under a surgeon for *six months*, the parent or guardian would seek further advice! Not so with the worthy almoners; boys have been from two to six years with diseased scalps, and, till very lately, all classed as ring-worms, but on any complaint being made, the answer invariably was, "We have confidence in our medical adviser." They would not, I think, hear this echoed at Bartholomew's, or by any medical man in town.

A GOVERNOR.

July, 1834.

TUNBRIDGE WELLS DISPENSARY.

To the Editor of THE LANCET.

SIR,—On public grounds alone I am induced to request your powerful aid in exposing a system lately adopted in the election of house-surgeon to the Tunbridge Wells Dispensary, which appears to me at least detrimental to the interests of the poor as well as to lower the respectability of the profession. I am aware, however, that in adopting this course I may be viewed in the ungraceful position of a disappointed candidate; but my friends will readily acquit me of any feeling in the matter, save a sincere desire, by unveiling an abuse, to lead to its correction.

I hope to escape the common error of colouring one's own case too highly; but confining myself to truth, it is necessary, in order to be understood, that I should explain the facts which gave me a much stronger claim upon the support of the governors of the institution than any of the other candidates. I had performed gratuitously the duties of the office, in the spring, for a short time, it is true, but long enough to elicit an expression of the most perfect satisfaction from every one concerned; and being, therefore, a tried man, I was considered as having a prior title to notice on that account. In addition to this I was assured by more than one governor that my testimonials (of which several had been awarded to me at the London University) were of a much higher stamp than those of my successful opponent; and they added, that unless foiled by hole-and-corner work in the committee, the day must be my own.

If this were the case, why, after spending much time and money, and suffering considerable anxiety in the pursuit of my aim, did I fail in its attainment? This mystery is quickly dispelled, when I explain that, before the advertisement appeared in one of your recent numbers, a Mr. Way, one of the surgeons to the dispensary, and perhaps one or two others, had been exerting all their sophistry in order to bias certain members of the committee in favour of his assistant. The reasons of this conduct (however artfully the parties to whom I allude may dress them up for the inspection of their friends) I will now expose.

The candidate whose cause was thus espoused had been required and had consented to enter into an agreement not to practise at or within five miles of Tunbridge Wells, for a period of three years after his resignation of the office, a measure solely originating from an interested source, and not sanctioned by any law of the institution. It is needless to say, that no proposition of this kind was made to myself. I was considered as *hors de combat*.

Verily these gentlemen must feel extremely sensible of the weak tenure by which they enjoy the public confidence, or they would not afford us such lamentable evidence of their fear of meeting another of their professional brethren in the fair and open field of honourable competition. I know that it will be said, "we have done this to avoid the evil of frequent changes of our house-surgeons;" but this is a very hollow disguise to screen the fact. If that were the object, it might be effected in a much better way, and without injustice, by simply pledging each gentleman, when elected to the office, to perform its duties for a certain number of years; after which, if he resigned, let him exert his energies and talents wherever his judgment led him.

It must be obvious, that the odious system to which I have taken the liberty of drawing your attention, is calculated to injure the dispensary, by deterring men of character and respectability from offering their services to it. It must, in short, tend to sacrifice the interests of the sick poor at the shrine of selfishness and illiberality. I hope that, however, I am not understood as wishing to reflect injuriously upon the present house-surgeon; he may be, and doubtless is, well qualified to perform his duties. It is merely against the *badness of the principle* that I protest. Still less can my remarks apply to those independent gentlemen, who so kindly interested themselves in my favour, that in spite of the influence of jobbing, my opponent had a majority of only three votes, and those were given against me by the three surgeons to the institution.

We may then draw this conclusion, that the whole facts prove incontestably (what you, Sir, have so frequently and so well shown), that there is an urgent necessity for reform in the method of conducting medical elections. It now remains my duty to apologize for the length of this communication, which, if you deem of public interest, you are at liberty to use as you please. I am, Sir, your obedient servant,

ROBT. ROMLEY CHEYNE.

Frances Street, Tunbridge Wells,
July 31st, 1834.

SURGEONS VISITING INDIA IN CHARGE OF TROOPS.

To the Editor of THE LANCET.

SIR,—You may be aware that the whole commanders and officers, surgeons and assistant-surgeons of the Hon. East India Company's late maritime service, are turned adrift, but it is expected that the hon. directors, with their usual liberality, will allow these officers the half-pay of their ranks.

The only good opportunity for a surgeon to go to sea now is, in those ships where the Company send out troops, and then the surgeon is allowed 15*s.* a head. But, Sir, a wealthy ship-owner has taken undue advantage of a surgeon in the present distress, and is to appropriate to himself the troop-money, which is intended by the always Hon. East India Company for the surgeon only.

Will you, by publishing this note, expose to the world the undue advantage thus taken; and, perhaps, it is within the province of the medical committee of the House of Commons to prevent its possible recurrence. I am, &c.,

JUSTITIA.

London, August, 1834.

ROYAL JENNERIAN VACCINE INSTITUTION.

To the Editor of THE LANCET.

SIR,—The grovelling spirit of pelf seems to be the *animus operandi* of this institution, contrary, I imagine, to the original intention of the founders of the establishment. The directors of the "*Royal* Jennerian Institution" are not content with the contributions of the public towards the humane purpose of protecting the rising generation against a loathsome disease, but they must tax the medical practitioners, through whose instrumentality the object of the subscribers is effected. Having had occasion to beg some vaccine matter, the answer was that none could be had without the usual fee of a guinea. Such an institution, instead of benefiting the community at large, is a gross humbug trying to enrich itself at the expense of medical practitioners. Yours truly,

D. L.

Finsbury, August 5th, 1834.

GUY'S HOSPITAL.

DISLOCATION OF THE FEMUR ON THE DORSUM ILII.

ON Saturday last John Burns was received into Barnabas Ward with dislocation of the femur on the dorsum ilii, which had remained unreduced for *three weeks*. He resided at Woolwich, and is a publican. His appearance is that of a well-formed athletic man, and he was in the Marine corps some few years back. The accident occurred simply from slipping down-stairs. All the diagnostic symptoms were well marked; when the patient stood up, the toes of the affected limb (the left) rested on the tarsal bones of the opposite foot; the leg was considerably shortened, and the knee was turned inward, and but little motion was allowed; still there was more than if the dislocation had been into the ischiatic notch, which opinion was indulged by Mr. B. COOPER; but the greater shortening of the limb, and the circumstance of the toes being thrown on the tarsus, instead of on the ball of the great toe on the opposite side, were quite sufficient to convince a reflecting surgeon that the head of the femur was thrown on the dorsum ilii.

The man was brought to the Hospital in the morning, and Mr. BRANSBY COOPER, who was the surgeon for the week was sent for immediately. The pulleys had been unsuccessfully applied previous to his admittance into the hospital, but on the arrival of Mr. COOPER he was largely bled; tartarized antimony was administered, and the pulleys were applied in the usual manner. Gradual extension was continued for about twenty minutes, Mr. COOPER all that time treating the dislocation, and rotating the limb, as if the dislocation had been into the ischiatic notch! The parts then appeared as if reduced, and the pulleys were loosened, but the head of the femur was still found to be without the acetabulum. Remonstrance was thereupon made with Mr. COOPER, the pulleys were reapplied, and the nausea was still induced with the antimony. Extension was then continued for a quarter of an hour, when a sudden rotation of the femur *inwards* threw the bone over the margin of the acetabulum into its cavity.

OPERATIONS.

During the last week a man with stone was operated upon by Mr. KEY under the following circumstances:—He had submitted to a similar operation once or twice previously, and there was some idea of having the patient operated upon by lithotrity, but to this the patient objected,

stating that the operation of "cutting was a mere nothing,"* but he thought he could not bear up against the operation of "grinding." The stone was of a large size when removed, and appeared flattened. Mr. KEY, aware of the size of the stone previous to extracting it, used a blunt gorget to dilate his first incision. The stone was removed within one minute. The patient is doing well.

A case of popliteal aneurysm was also made the subject of operation by Mr. MORGAN, who, as usual, passed a ligature around the femoral artery. No difficulty occurred during the operation, and the patient has since gone on remarkably well.

A malignant tumour situated beneath the eye was afterwards removed from the face of a female. It is to be allowed to heal by granulations.

HYDROPHOBIA.—INHALATION OF NIT. OXIDE GAS.

A young man suffering from hydrophobia was admitted on Saturday the 27th ult. The symptoms were very aggravated towards the latter part of his existence. No relief could be afforded to him, the spasms being of a most horrible nature. He was a patient of Dr. BACK, and at the express wish of Mr. MORGAN was treated by inhaling the nitrous oxide gas, but the effects produced by it were so far from satisfactory, that instead of allaying the spasm it appeared rather to aggravate it, and to keep up a constant state of excitement in the patient. Although when admitted the symptoms were extremely moderate, yet he did not survive more than eighteen hours. The friends of the deceased would not allow a post-mortem inspection to be made.

ST. GEORGE'S HOSPITAL.

WASHING THE WARDS.—NOTE FROM THE CHAPLAIN.

To the Editor of THE LANCET.

SIR,—Having read in the last number of THE LANCET some observations on a case of erysipelas under the care of Mr. BRODIE which terminated unfavourably, I find that it has been attributed to the frequent washing of the wards of the Hospital; and this statement is accompanied with an assertion that this was done by the order of the chaplain.

I therefore take the earliest opportunity of requesting that—on authority quite as likely to be correct as that of your informant—you will contradict that statement. I can most positively assert that *I never gave the order* in question. But farther than this I beg to state, that I have always been opposed to the pernicious practice, which formerly existed, of frequently and extensively washing the wards; and that without looking upon the subject either as a medical or "*clerical*" question, but simply as a matter of *common sense*. I have ever done my best to enforce the order of the Board by prohibiting the practice as far as possible.

If then the rule has been transgressed to any great extent,—which, by the by, I do not find to have been the case,—the fault is certainly not to be attributed to me, but to the officiousness of others, who, without any authority, but with the best possible intentions, may have interfered with the internal arrangements of the Hospital. I am, sir, your obedient servant,

W. H. WALKER,
Chaplain to St. George's Hospital.

St. George's Hospital,
August 6th, 1834.

THE investigations before the Parliamentary Committee have been continued during the past week. The latest subjects of inquiry have been the Irish College of Surgeons, the Dublin Company of Apothecaries, and the King and Queen's College of Physicians, Ireland. The questions proposed have been of a searching character, and the answers from the opponents of alteration have been equally strong in favour of a change of system, with those of the most ardent friends of medical reform. It has been reported that Sir Henry Halford, when he heard what had been going on in Ireland, snappishly remarked that it was "all up" with them.

Sir ANTHONY CARLISLE has published another letter in *The Times*, for the purpose of announcing to the public that he is still in Langham Place. Why does *The Times* relieve this very silly advertiser from the imposition of the advertise ment duty?

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* We wish the declining operation joy of such an advocate.—ED. L.

CORRESPONDENTS.

COMMUNICATIONS have been received from E. O., Dublin—Mr. Wilcox—Dr. Mitchell—Vindex—A Cast-off Jackall—A Looker-on in Christ's Hospital—An unsigning Writer on the Degrading Distinctions between the Naval and Military Service—Mr. B. Morgan—Hocus—Mr. T. L. Russell—Mr. J. G. Shepherd—Mr. Gerrard—Mr. Routh—Scrutator—Mr. T. Y. Cotter.

The case, forwarded by *Professor Lizars*, would have appeared this week, but the engraver failed to complete his work in time for the present No. It will be published in the next LANCET.

Before we apply the edge of *Scalpel*, we should like to have a conversation with our correspondent on the subject designed for the operation. It cannot be true that Sir Charles Bell has "instituted an action against the editors of the *Edinburgh Medical and Surgical Journal*, for insinuating that Sir Charles has plagiarized the discoveries of Bellinghieri." Surely the reviewers would not *insinuate* anything of the kind. Facts and dates must suggest their own inferences. We have not yet examined the question. It is one of importance to the medical character of this country.

The copy of Mr. Giraud's letter has been mislaid. Will Mr. Shepherd be so good as to forward another, that it may be noticed with his communication next week.

B. We feel obliged by the proposal, although want of space prevents us from accepting it.

G. H. The best description for the general reader will be found in Quain's "Elements of Anatomy."

Delta cannot be dissatisfied with what has been done with respect to the Irish College of Surgeons. From what we have heard of the examinations, not a point was left untouched. For *four* long communications we had not room. The object of the writer and his friends has been happily accomplished without their insertion. We shall always be glad to hear from our correspondent.

The communication of *An unflinching Friend of the Profession* is left for him with our publisher. The article is too long for insertion. Besides, the views of the writer have been repeatedly enforced in the pages of this journal. He may rest assured that the Dispensary "nuisances" are on the high road to abatement.

The motives of *Humanitas* are commendable, but we do not believe that the publication of the case entitled "Obstetric Delinquency," extracted from an old number of the "Repository," will prove of any service. Such treatment since the occurrence of the Hampton case, four years ago, has not been heard of, and most likely never will be put in practice again. The general practitioners who undertake the duties of accoucheurs, include amongst them many of the best educated men in the profession.

Emulus had better pass by the door on the threshold of which he says he is now placed. At such an age, and with such limited means, it would be madness for him to commence the study of medicine with a view to deriving pecuniary advantage from the profession.

Omega. We should not have room in the present volume for such a series of papers, which, moreover, ought to have the authority of a published name. Anonymous cases are of no value.

Dr. M'Carthy's case of Ascites and general Anasarca shall be inserted.

Argus. All of the communication that was not libellous, or merely of a personal nature, would have been published, had it been authenticated.

F. T. C.—M. Roux was the son-in-law of Baron Boyer. At the election (Acad. of Sci.) M. R. obtained 28 votes. M. Breschet, his opponent, received 26.

NOTICE.—It is particularly requested that ALL letters of business forwarded to the Office of THE LANCET,—whether they relate to the contents of the journal, or refer to transactions connected with the Commission Department,—be INVARIABLY addressed to THE EDITOR—MR. WAKLEY. If this rule be not observed, it is impossible to guard against the impositions of anonymous scribblers who appear to have no other employment or pleasure than that of subjecting the conductors of journals to a heavy extortion in the shape of post-tax. If all letters of business transmitted to the office be addressed to the Editor, and NO letters, unless so addressed, be received except the postage be paid, impositions will be effectually prevented.

BOOKS RECEIVED.

From the author. De L'Organisation Médicale en France. Par Victor Stoeber, D.M. Prof. agrege a la Faculte de Méd. en Strasbourg. Paris, 1834, pp. 134.

Manuel Pratique D'Ophthalmologie, ou Traité des Maladies des Yeux. Par Victor Stoeber, Docteur en Médecine. Paris, 1834, pp. 496.

Illustrations of the Natural History of Worcestershire, with Information on the Statistics, Zoology, and Geology, of the County, including a Short Account of its Mineral Waters. By Charles Hastings, M.D. London. Sherwood. 8vo. pp. 184.